


FORM PTO-1390 (REV. 11-2000)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER 2048-3-02	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 09/763589	
INTERNATIONAL APPLICATION NO. PCT/KR99/00690		INTERNATIONAL FILING DATE November 17, 1999		PRIORITY DATE CLAIMED July 19, 1999	
TITLE OF INVENTION Method and device for generating voice/text/image commercial information ringback tone during communication wait					
APPLICANT(S) FOR DO/EO/US RINGFREE CO., LTD.					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<p>1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.</p> <p>4. <input type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31).</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))</p> <p>a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</p> <p>b. <input type="checkbox"/> has been communicated by the International Bureau.</p> <p>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</p> <p>6. <input checked="" type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).</p> <p>a. <input checked="" type="checkbox"/> is attached hereto.</p> <p>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</p> <p>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))</p> <p>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</p> <p>b. <input type="checkbox"/> have been communicated by the International Bureau.</p> <p>c. <input checked="" type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</p> <p>d. <input type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p> <p>Items 11 to 20 below concern document(s) or information included:</p> <p>11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</p> <p>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</p> <p>13. <input type="checkbox"/> A FIRST preliminary amendment.</p> <p>14. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.</p> <p>15. <input type="checkbox"/> A substitute specification.</p> <p>16. <input type="checkbox"/> A change of power of attorney and/or address letter.</p> <p>17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.</p> <p>18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).</p> <p>19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</p> <p>20. <input type="checkbox"/> Other items or information:</p>					

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U.S. APPLICATION NO. (if known) 09/763589 Unknown		INTERNATIONAL APPLICATION NO. PCT/KR99/00690		ATTORNEY'S DOCKET NUMBER 2048-3-02	
21. <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO. \$1000.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$860.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$710.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$690.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT =				CALCULATIONS PTO USE ONLY	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$ 1,000	
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Total claims	19 - 20 =		x \$18.00	\$ 0	
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<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				\$ 500	
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METHOD AND DEVICE FOR GENERATING VOICE/TEXT/IMAGE
COMMERCIAL INFORMATION RINGBACK TONE DURING COMMUNICATION
WAIT

5 TECHNICAL FIELD

The present invention relates to a method and a device
for generating a commercial information ringback tone such
as advertisements, music or news during a communication
10 wait, and more particularly to a method and a device for
generating voice/text/image commercial information ringback
tone during the communication is on wait in which when a
telephone caller calls upon a telephone receiver or upon
any type of automatic response application systems(ARS,
15 VMS, VISS, PPS) by using ordinary telephones, mobile
telephones(CDMA, PCS, TDMA, GSM, AMPS, IMT-2000), video
telephones, satellite telephones or internet telephones,
the caller can hear and see by providing into the caller's
telephone various commercial information such as
20 advertisements, music or news in forms of voice, text or
image instead of the waiting signal sound through the
telephone.

BACKGROUND ART

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In general, when a telephone caller by using ordinary
telephones or mobile telephones calls a particular company

or a subscriber service center by phone, he or she can hear the commercial advertisements. These advertisements have been very effective since they naturally flow out during the communication wait. In a conventional art, during the communication is on wait, messages such as "hold on for a while", and "other communication is still going on" are repetitively generated to the caller's phone. Recently, a particular service system for some mobile telephones provides voice type advertisements to the caller's phone.

When an user makes a phone call, the user can be provided the advertisements instead of the waiting signal sound or the repeating voice ment informed by a particular service, relax a tiresome state and also can get a telephone charge discount.

Recently, at pharmacies or restaurants provide free call service for the clients. In the free call service, upon hearing advertisements for 10 to 15 seconds, the clients can use the telephone for free.

However, in the conventional free call service, the user must call to the advertisement company at first, hear the advertisement and then input the number he wants to. So, there is a problem that can be happened time consuming and inconvenient aspects.

DISCLOSURE OF THE INVENTION

The object of the present invention is to overcome the

above described problem and is to provide a method for generating a voice/text/image commercial information ringback tone through which the telephone originator can hear and see advertisements, music and news in the form of voice, text or image with the background music, and through which the communication company can have the benefit made by providing the commercial information and the advertisement company can maximize the advertisement productivity.

Another object of the invention is to provide an information generating device during the communication wait to achieve the above described method.

To achieve the first object, there is provided a method for generating a voice/text/image commercial information ringback tone through a communication system including a call process function carrying out a transfer of a commercial information to an originating telephone instead of a ringback tone or a guide message during a communication wait till a receiving side is received after the calling from the originating telephone of a subscriber to a receiving side(a receiving telephone of a subscriber or a receiving communication system)is completed, the method comprising the steps of: checking a telephone call(S1), connecting with an information generating device(hereinafter, a commercial information ringback tone generating system/device) at an originating or a receiving communication system when the call is detected(S2), beginning to transmit a commercial information to an

originating telephone from the commercial information
ringback tone generating system in at least one form of a
voice, a text, and/or an image, during a communication
wait(S3), requesting a connection to a receiving telephone
5 from the commercial information ringback tone generating
system when a first predetermined time(A-timeout)
lapses(S4),and continuously transmitting the commercial
information to the originating telephone(S5); checking
whether the receiving telephone accepts the connection
10 request(S6), checking whether a second predetermined
time(B-timeout) lapses since the commercial information
ringback tone is provided if the connection request is not
accepted(S11), checking whether a telephone connection
fails if within the second predetermined time(B-
15 timeout)(S14) and continuously providing the commercial
information ringback tone to the originating telephone if
the telephone connection does not fail(S5); stopping the
providing of the commercial information ringback tone if
the telephone connection is made in the step S6(S7),
20 connecting a communication line between the originating
telephone and the receiving telephone(S8), checking whether
the communication is finished(S9), and disconnecting the
communication line if the communication finishes(S10);
stopping the sending of the commercial information ringback
25 tone if the second predetermined time(B-timeout) lapses
since the connection request in the step S11(S12), and
connecting a relay line between an originating switch and
a receiving switch(S13); and stopping the sending of the

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etc a subscriber communication line and a relay communication line which are positioned in a switch system, the device comprising: a commercial information server for providing commercial information including advertisement, music, composite information(news, weather, sports, stock information, humor, entertainment etc), subscriber information(bio-rhythm, fortune, position, entertainer information, stock, fee information etc); a voice/text/image commercial information ringback tone generating device for providing a commercial information ringback tone in forms of a voice, a text, or an image from the commercial information server to the originating telephone which is on communication wait through the subscriber communication line, the voice/text/image commercial information Ringback tone generating device being provided in the switch system; a voice/text/image commercial information ringback tone generating system for providing a commercial information ringback tone in forms of a voice, a text, or an image from the server to the originating telephone which is on wait through the relay communication line and the subscriber communication line, the voice/text/image/commercial information ringback tone generating system being provided outside of the switch system; and a subscriber's private information server for providing a subscriber's private information individually in terms of regions, gender, ages and time bands, the commercial information ringback tone is provided depending on the subscriber's private information.

FIG.1 is a block diagram of a system providing voice/text/image commercial information ringback tone service.

FIG.3 is a flow chart for illustrating the method to generate an original ringback tone after the voice/text/image commercial information is provided during a communication wait.

FIG.5a shows a commercial information ringback tone generating procedure in case where the commercial information Ringback tone generating system is used as a toll station at the originating switch system according to a first embodiment of the invention.

FIG.6 is a connection diagram between systems using

the commercial information ringback tone generating system in the originating switch system.

FIG.7 shows a commercial information ringback tone generating procedure by the commercial information ringback tone generating device in the originating switch system in accordance with a second embodiment of the invention.

FIG.8 is a system connection diagram using commercial information ringback tone generating system at a receiving switch system.

FIG.9a shows a commercial information ringback tone generating procedure in case where the commercial information ringback tone generating system is utilized as a toll station at the receiving switch system according to a third embodiment of the invention.

FIG.9b shows a commercial information ringback tone generating procedure in case where the commercial information ringback tone generating system is set as an end station at the receiving switch system according to a third embodiment of the invention.

FIG.10 is a system connection diagram using the commercial information ringback tone generating device in the receiving switch system.

FIG.11 shows a commercial information ringback tone generating procedure using the commercial information ringback tone generating device in the receiving switch system in accordance with a fourth embodiment of the invention.

FIG.12 is a connection diagram between systems using

a commercial information announcement generating system.

FIG.13 shows a commercial information announcement generating procedure using a commercial information announcement generating system according to a fifth embodiment of the invention.

FIG.14 is a connection diagram between systems using a commercial information announcement generating device of an automatic response application system such as ARS, VMS, VISS(Voice Information Service System), PPS(PrePaid System) etc.

FIG.15 shows a commercial information announcement generating procedure using a commercial information announcement generating device in accordance with a sixth embodiment of the invention.

FIG.16 is a connection diagram between systems using the commercial information Ringback tone generating device on an intelligent network.

FIG.17 shows a commercial information ringback tone generating procedure using the commercial information ringback tone generating system on the intelligent network according to a seventh embodiment of the invention.

FIG.18 is a connection diagram between systems using a commercial information ringback tone generating device of an Intelligent Peripheral on the intelligent network.

FIG.19 shows a commercial information ringback tone generating procedure using a commercial information ringback tone generating device of the Intelligent Peripheral on the intelligent network according to a eighth

embodiment of the invention.

BEST MODE FOR CARRYING OUT THE INVENTION

5 Hereinafter, preferred embodiments of the present invention will be described with reference to the accompanying figures.

 Referring to FIG. 1, which is a system construction diagram for providing a service using a telephone ringback
10 tone having voice/text/image commercial information(advertisement, music, news, stock, weather information etc), the system includes an originating telephone 1 and a receiving telephone 4 including ordinary
15 telephones, video telephones, mobile telephones, satellite telephones and internet telephones, a subscriber communication line 2 and a voice/text/image commercial information ringback tone generating device 3 in a switch system, a relay communication line 5, a voice/text/image commercial information ringback tone generating system 6
20 and a commercial information server 7, a subscriber's private information server 8 and a switch system 9 in a telephone office.

 When a caller makes a call by the originating telephone 1, commercial information such as advertisement,
25 music or news in forms of voice, text or image are provided to originating telephone 1 during a communication wait by commercial information providing server 7 which provides a

commercial information ringback tone including advertisement, music, composite information(news, weather, sports, stock evaluation, humor, entertainment) and a subscriber's private information(bio-rhythm, fortune, position, entertainer information, stock, fee etc) through the voice/text/image commercial information ringback tone generating system 6 installed outside of the switch system or the voice/text/image commercial information ringback tone generating device 3 installed inside the switch system.

The voice/text/image commercial information ringback tone generating device 3 in the switch system or the voice/text/image commercial information ringback tone generating system 6 stores the commercial information in forms of voice, music, text or image by the request of the commercial information provider such as advertisement company, broadcast station or stock company. When there is a call from the originating telephone 1, the commercial information are provided to the originating telephone 1 during communication wait from the voice/text/image commercial information ringback tone generating device 3 or the voice/text/image commercial information Ringback tone generating system 6 through the subscriber communication line 2.

FIG.2 is a flow chart for illustrating a method for providing the voice/text/image commercial information during the communication wait according to the present invention.

The method includes the steps of checking a telephone call(S1), connecting with an information generating device(hereafter, a commercial information ringback tone generating system/device) at an originating or a receiving communication system when the call is detected(S2),
 5 beginning to transmit a commercial information such as advertisement, music, news, weather, sports, stock evaluation, humor, bio-rhythm, fortune, entertainment, position, fee in at least one form of a voice, or a text,
 10 or an image, or a voice and a text, or a voice and an image, or a text and an image, or a voice and a text and an image instead of the original ringback tone or the guide message to an originating telephone from the commercial information ringback tone generating system during a
 15 communication wait(S3), requesting a connection to a receiving telephone from the commercial information ringback tone generating system after a first predetermined time(A-timeout) lapses(S4), and continuously transmitting the commercial information to the originating
 20 telephone(S5).

The method further includes the steps of: checking whether the receiving telephone accepts the connection request(S6), checking whether a second predetermined time(B-timeout) lapses since the commercial information
 25 ringback tone is generated if the connection request is not accepted(S11), checking whether a telephone connection fails if it is within the second predetermined time(S14) and continuously providing the commercial information

ringback tone to the originating telephone if the telephone connection does not fail(S5).

5 The method further includes the steps of: stopping the providing of the commercial information ringback tone if the telephone connection is made in the step S6(S7), connecting a communication line between the originating telephone and the receiving telephone(S8), checking whether the communication is finished(S9), and disconnecting the communication line if the communication finishes(S10).

10 The method further includes the steps of: stopping the sending of the commercial information ringback tone if the second predetermined time(B-timeout) lapses since the connection request begins in the step S11(S12), and connecting a relay line between an originating switch system and a receiving switch system(S13).

15 The method further includes the steps of: stopping the sending of the commercial information ringback tone if the connection request fails(S15), releasing the relay line between the originating switch system and the receiving switch(S16), checking whether a next connection request is(S17), and beginning to transmit the commercial information to the originating telephone from the commercial information ringback tone generating system(S3).

20 Referring to FIG.3, when a ringback tone hearing mode is set, the method further comprises the steps of requesting a connection to the receiving telephone after the first predetermined time(A-timeout) lapses in the step S4, stopping the sending of the commercial information

ringback tone and transmitting an original ringback tone to the originating telephone(S18), checking whether the receiving telephone accepts the request(S19), stopping the providing of the ringback tone if the request is accepted(S20), connecting the communication line between the originating telephone and the receiving telephone(21), checking whether the communication is finished(S22), and disconnecting the communication line between the originating telephone and receiving telephone(S23).

FIG.4 is a connection diagram between systems using the commercial information ringback tone generating system at the originating switch system. The originating switch system includes a switch, PABX and other switch.

FIG.5a illustrates a commercial information ringback tone generating procedure in case where the commercial information ringback tone generating system is used as a toll station at the originating switch system in accordance with a first embodiment of the invention.

The first embodiment includes the steps of: requesting a connection to the commercial information ringback tone generating system by sending an initial address message(IAM) from the originating switch system(2) when the originating telephone makes a call to the originating switch system(1), confirming the connection from the commercial information ringback tone generating system by sending an address complete message(ACM) to the originating switch system(3), replying a receiver connection by sending an answer message(ANM) from the commercial information

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information ringback tone generating system by stopping the sending of the commercial information ringback tone and sending the answer message(ANM) in case of free ringback tone type(11), and stopping the sending of the commercial information ringback tone to the originating switch system from the commercial information ringback tone generating system in case of the charged ringback tone type(11-1).

The method further includes the steps of: connecting the communication line between the originating telephone and the receiving telephone(12).

The method further includes the steps of: requesting(14) a release to the commercial information ringback tone generating system from the originating switch system by sending a release message(REL) when the originator is disconnected(13), confirming the release to the originating switch system from the commercial information ringback tone generating system by sending a release complete message(RLC)(15), requesting a release to the receiving switch system from the commercial information ringback tone generating system by sending a release message(REL)(16), confirming the release to the commercial information ringback tone generating system from the receiving switch system by sending a release complete message(RLC)(17), and finishing the communication by disconnecting the receiving telephone from the receiving switch system(18).

FIG.5b shows the procedure for generating commercial information ringback tone in a case where the commercial

information ringback tone generating system is used as an end station in the originating switch system according to the first embodiment of the invention.

5 The method includes the steps of: requesting(2-1) a connection to the commercial information ringback tone generating system by sending an initial address message(IAM) from the originating switch system when the originating telephone makes a call to the originating switch system(1-1), confirming the connection from the
10 commercial information ringback tone generating system by sending an address complete message(ACM) to the originating switch system(3-1), replying(3-2) a receiver connection from the commercial information ringback tone generating system to the originating switch system by sending an
15 answering message(ANM) in case of the charged ringback tone type.

The method further includes the steps of: transmitting the commercial information ringback tone(advertisement, music, news, stock, weather, fortune and so on) from the
20 commercial information ringback tone generating system to the originating telephone, stopping(4-1) the commercial information ringback tone when the connection fails after the second predetermined time(B-timeout) lapses.

25 The method further includes the steps of: requesting a connection for a receiving telephone to a receiving switch from the originating switch system by sending the initial address message(IAM) after the first predetermined time(A-timeout) lapses(5-1) since the beginning of the

commercial information transmission, confirming the connection from the receiving switch system by sending the address complete message(ACM) to the originating switch system(6-1), ringing the receiving telephone from the receiving switch system(7-1), sending a call progress message(CPG) from the receiving switch system to the originating switch system(8-1). When a receiver receives a call with the receiving telephone(9-1), a receiver connection is done by replying(10-1) a receiving telephone connection to the originating switch system from the receiving switch system by sending an answer message(ANM), and requesting a stop of the commercial information ringback tone from the originating switch system by sending a release message to the commercial information ringback tone generating system(11-2).

The method further includes the steps of: confirming the release to the originating switch system from the commercial information ringback tone generating system by sending a release complete message(RLC)(11-3), connecting the communication line between the originating telephone and the receiving telephone(12-1) through the originating and receiving switch systems.

When the originator disconnects the communication(13-1), the method further goes through the steps of: requesting a release to the receiving switch system from the originating switch system by sending a release message(REL)(14-1), confirming the release to the originating switch system from the receiving switch system

by sending a release complete message(RLC)(15-1),and finishing the communication by disconnecting the receiving telephone from the receiving switch system(16-1).

FIG.6 is a schematic diagram for illustrating a connection between systems using the commercial information ringback tone generating device in the originating switch system.

FIG.7 shows a procedure for generating the commercial information ringback tone in a case where the commercial information ringback tone generating device in the originating switch system is used according to a second embodiment of the invention.

The second embodiment includes the steps of: making a call the originating telephone to the originating switch system(21), requesting a connection to the commercial information ringback tone generating device from the originating switch system(22), and replying the connection from the commercial information ringback tone generating device to the originating switch system(23).

The method further includes the steps of: transmitting the commercial information ringback tone to the originating telephone from the commercial information ringback tone generating device and when the connection fails after the second predetermined time(B-timeout) lapses, stopping the commercial information ringback tone(24).

The method further includes the steps of: requesting a connection to the receiving switch system by sending an initial address message(IAM) from the originating switch

system(25) after a first predetermined time(A-timeout) lapses since the beginning of the commercial information ringback tone transmission, confirming the connection to the originating switch system by sending an address complete message(ACM) from the receiving switch system(26), ringing the receiving telephone from the receiving switch system(27), sending a call progress message(CPG) from the receiving switch system to the originating switch system(28), replying a receiver connection(30) to the originating switch system by sending an answer message(ANM) from the receiving switch system when a receiver receives a call with the receiving telephone(29), and requesting a release of the commercial information ringback tone to the commercial information ringback tone generating device from the originating switch system(31).

The method further includes the steps of: connecting a communication line between the originating telephone and the receiving telephone(32).

The method further includes the steps of: requesting(34) a release to the receiving switch system from the originating switch system by sending a release message(REL) when the originating telephone is disconnected from the originating switch system(33), confirming the release to the originating switch system from the receiving switch system by sending a release complete message(RLC)(35), and finishing the communication by disconnecting the receiving telephone from the receiving

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switch system(36).
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FIG.8 is a schematic diagram for illustrating a connection between systems using the commercial information ringback tone generating device at the receiving switch system. The receiving switch system includes a switch, a PABX and other switches.

FIG.9a shows a procedure for generating the commercial information ringback tone in a case where the commercial information ringback tone generating system is utilized as a toll station outside of the receiving switch system according to a third embodiment of the present invention.

The third embodiment includes the steps of: making a call the originating telephone to the originating switch system(41), requesting a connection to the receiving switch system by sending an initial address message(IAM) from the originating switch system(42), requesting a connection to the commercial information ringback tone generating system by sending an initial address message(IAM) from the receiving switch system(43), confirming the connection from the commercial information ringback tone generating device to the receiving switch system by sending an address complete message(ACM) (44), confirming the connection to the originating switch system by sending an ACM from the receiving switch system(45), replying a connection to the receiving switch system from the commercial information ringback tone generating system by sending an answering message(ANM) (45-1), and replying a connection to the

originating switch system from the receiving switch system by sending an answer message (ANM) (45-2).

5 The method further includes the steps of: transmitting the commercial information ringback tone to the originating telephone from the commercial information ringback tone generating system, and when the connection fails after the B-timeout lapses, stopping the commercial information ringback tone (46).

10 The method further includes the steps of: requesting a connection to the receiving switch system by sending an initial address message (IAM) from the commercial information ringback tone generating system after the first predetermined time (A-timeout) lapses since the beginning of the commercial information Ringback tone transmission (47),
15 confirming the connection to the commercial information ringback tone generating system by sending an address complete message (ACM) from the receiving switch system (48), ringing the receiving telephone from the receiving switch system (49), sending a call progress message (CPG) from the receiving switch system to the commercial information
20 ringback tone generating system (50), replying a receiver connection (52) to the commercial information ringback tone generating system by sending an answer message (ANM) from the receiving switch system when a receiver receives a call
25 with the receiving telephone (52). The method further goes through the steps of: stopping the commercial information ringback tone to the originating switch system from the commercial information ringback tone generating system and

replaying a connection by sending an answer message (ANM) (53) in case of free ringback tone type, and stopping the commercial information ringback tone to the originating switch system from the commercial information ringback tone generating system in case of charged ringback tone type(53-1).

The method further includes the steps of: connecting a communication line between the originating telephone and the receiving telephone(54).

The method further includes the steps of: requesting a release(56) of the commercial information ringback tone to the commercial information ringback tone generating system from the originating switch system by sending a release message(REL) when the receiving telephone is disconnected from the originating switch system(55), and confirming the release to the originating switch system from the commercial information ringback tone generating system by sending a release complete message(RLC) (57).

The method further includes the steps of: requesting a release to the receiving switch system from the commercial information ringback tone generating system by sending a release message(REL) (58), confirming the release to the commercial information ringback tone generating system from the receiving switch system by sending a release complete message(RLC) (59), and finishing the communication by disconnecting the receiving telephone from the receiving switch system(60).

FIG.9b shows a procedure for generating the

commercial information ringback tone in a case where the commercial information ringback tone generating system is set as an end station outside of the receiving switch system according to the third embodiment of the present invention.

The method further comprises the steps of: making a call to the originating switch system by using the originating telephone(41-1), requesting a connection to the receiving switch system by sending an initial address(IAM) message from the originating switch system(42-1), requesting a connection to the commercial information ringback tone generating system by sending an initial address message(IAM) from the receiving switch system(43-1), confirming a connection from the commercial information ringback tone generating system to the receiving switch system by sending an address complete message(ACM)(44-1), confirming a connection from the receiving switch system to the originating switch system by sending an address complete message(ACM)(45-3).

The method further goes through the steps of: replying a receiver connection to the receiving switch system from the commercial information ringback tone generating system by sending an answer message(ANM)(45-4) in case of charged ringback tone type, and replying a receiver connection to the originating switch system from the receiving switch system by sending an answering message(ANM)(45-5).

The method further goes through the steps of: transmitting the commercial information ringback tone to

the originating telephone from the commercial information ringback tone generating system, and when the connection fails after the B-timeout lapses, stopping the commercial information ringback tone(46-1).

5 The method further goes through the steps of:
requesting a release and requesting a stop of the
commercial information ringback tone to the commercial
information ringback tone generating system from the
receiving switch system(49-1) by sending a release
10 message(REL) when the receiving telephone ringing(47-1) and
a receiver receives a call with the receiving
telephone(48-1) after the first predetermined time(A-
timeout) lapses since the beginning of the commercial
information ringback tone transmission.

15 The method further goes through the steps of:
confirming a release to the receiving switch system by
sending a release complete message(RLC) from the commercial
information ringback tone generating system(50-1) and
replying a receiver connection to the originating switch
20 system by sending an answer message(ANM) from the receiving
switch system in case of free ringback tone type(51-1).

 The method further goes through the steps of:
connecting the communication line between the originating
telephone and the receiving telephone(52-1).

25 The method further goes through the steps of:
requesting a release(54-1) to the receiving switch system
from the originating switch system by sending a release
message(REL) when the originating telephone is disconnected

from the originating switch system(53-2), confirming the release to the originating switch system from the receiving switch system by sending a release complete message(RLC)(55-1), and finishing the communication by
5 disconnecting the receiving telephone from the receiving switch system(56-1).

FIG.10 is a schematic diagram for illustrating a connection between systems using the commercial information ringback tone generating device in the receiving switch
10 system.

FIG.11 shows a procedure for generating the commercial information ringback tone in a case where the commercial information ringback tone generating system in the receiving switch system is adapted according to a fourth
15 embodiment of the present invention.

The fourth embodiment includes the steps of: making a call to the originating switch system by using the originating telephone(61), requesting a connection to the receiving switch system by sending an initial address
20 message from the originating switch system(62), confirming the connection to the originating switch system by sending an address complete message(ACM) from the receiving switch system(63), requesting a connection to the commercial information ringback tone generating device from the
25 receiving switch system(64), replying the connection to the receiving switch system from the commercial information ringback tone generating device(65), and answering a connection to the originating switch system from the

receiving switch system by sending an answer message(ANM) (65-1) in case of charged ringback tone type.

5 The method further includes the steps of: transmitting the commercial information ringback tone to the originating telephone from the commercial information ringback tone generating system in the receiving switch system(66).

10 The method further includes the steps of: sending a call progress message(CPG) (68) to the originating switch system from the receiving switch system when the receiving telephone rings(67) after the first predetermined time(A-timeout) lapses since the beginning of the commercial information ringback tone transmission, requesting a stop of the commercial information ringback tone to the commercial information ringback tone generating device from
15 the receiving switch system(70) when a receiver receives a call with the receiving telephone(69). The method further includes the steps of: replying a receiver connection to the originating switch system from the receiving switch system by sending an answer message(ANM) in case of free
20 ringback tone type(70-1).

25 The method further includes the steps of: connecting the communication line between the originating telephone and receiving telephone(71), requesting a release(73) to the receiving switch system from the originating switch system by sending a release message(REL) when the originating telephone is disconnected from the originating switch system(72), confirming the release to the originating switch system from the receiving switch system

by sending a release complete message(RLC)(74), and finishing the communication by disconnecting the receiving telephone from the receiving switch system(75).

5 FIG.12 is a schematic diagram for illustrating a connection between systems using the commercial information announcement generating system.

FIG.13 shows a procedure for generating the commercial information announcement using the commercial information announcement generating system according to a
10 fifth embodiment of the present invention.

The fifth embodiment includes the steps of: requesting a connection(82) to the commercial information announcement generating system from the originating switch system by sending an initial address message(IAM) when the
15 originating telephone makes a call to the originating switch system(81), confirming the connection to the originating switch system by sending an address complete message(ACM) from the commercial information announcement generating system(83), and replying a receiver connection
20 to the originating switch system by sending an answer message(ANM) from the commercial information announcement generating system in case of charged announcement type(83-1).

The method further includes the steps of: transmitting
25 the commercial information announcement(advertisement, music, news, stock, weather, fortune and so on) from the commercial information announcement generating system to the originating telephone and stopping the commercial

information announcement when the communication connection fails after the second predetermined time(B-timeout) lapses(84).

The method further includes the steps of: requesting
5 a connection(85) to the receiving switch system or an automatic response application system(ARS, VMS etc) from the commercial information announcement generating system by sending an initial address message(IAM) after the first predetermined time(A-timeout) lapses since the beginning of
10 the commercial information announcement transmission, confirming the connection to the commercial information announcement generating system by sending an address complete message(ACM) from the receiving switch system(86), sending a call progress message(CPG) to the commercial
15 information announcement generating system from the receiving switch system or the automatic response application system(88) after the receiving telephone rings(87), and when a receiver receives a call with the receiving telephone(89), replying a receiver connection to
20 the commercial information announcement generating system from the receiving switch system or the automatic response application system(90).

The method further includes the steps of: replying a
25 receiver connection to the originating switch system from the commercial information announcement generating system by stopping the commercial information announcement and sending an answer message(ANM) in case of free of charge announcement type(91), stopping the commercial information

announcement in case of charged announcement type(91-1).

The method further includes the steps of: connecting the communication line between the originating telephone and the receiving telephone(92).

5 The method further includes the steps of: requesting a release(94) to the commercial information announcement generating system from the originating switch system by sending a release message(REL) when the originating telephone is disconnected from the originating switch
10 system(93), confirming the release to the originating switch system from the commercial information announcement generating system by sending a release complete message (RLC) (95).

15 The method further includes the steps of: requesting a release to the receiving switch system or the automatic response application system by sending a release message (REL) from the commercial information announcement generating system(96), confirming the release to the commercial information announcement generating system from
20 the receiving switch system by sending a release complete message(RLC) (97), and finishing the communication by disconnecting the receiving telephone from the receiving switch system or the automatic response application system(98).

25 FIG.14 is a schematic diagram for illustrating a connection between systems using the commercial information announcement generating system of an automatic response application system. The automatic response

application system includes an ARS(Automatic Response system), a VISS(Voice Information Service System), PPS(PrePaid System) etc. The commercial information announcement includes advertisements, music, news, stock, weather etc.

FIG.15 shows a procedure for generating the commercial information announcement using the commercial information announcement generating device of the automatic response application system according to a sixth embodiment of the invention.

Referring to FIG.15, the commercial information announcement is generated by using the commercial information announcement generating device of the automatic response application system including a voice/text/image commercial information announcement device and an automatic response applied device.

The sixth embodiment includes the steps of: requesting a connection(102) to the automatic response application system from the originating switch system by sending an initial address message(IAM) when the originating telephone makes a call to the originating switch system(101), confirming the connection to the originating switch system by sending an address complete message(ACM) from the automatic response application system(103), requesting a connection to the commercial information announcement generating device from the automatic response application system(104), replying a connection to the automatic response application system from the commercial information

announcement generating device(105), and replying a receiver connection to the originating switch system by sending an answer message from the automatic response application system in case of charged announcement type(105-1).

The method further goes through the steps of: transmitting the commercial information announcement from the commercial information announcement generating device to the originating telephone(106) and requesting a stop of the commercial information announcement after the first predetermined time(A-timeout) lapses(107).

The method further goes through the steps of: requesting a connection to an automatic response applied device from the automatic response application system(108), replying a connection to the automatic response applied system from the automatic response applied device(109), and replying a receiver connection to the originating switch system by sending an answer message(ANM) from the automatic response application system in case of free announcement type(109-1).

The method further goes through the steps of: connecting a communication line between the originating telephone and the automatic response applied device(110).

The method further goes through the steps of: requesting a release(112) to the automatic response application system from the originating switch system by sending a release message(REL) when the originating telephone is disconnected from the originating switch

system(111), confirming the release to the originating switch system from the automatic response application system by sending a release complete message(RLC)(113), and disconnecting the automatic response applied device from the automatic response application system(114).

FIG.16 is a schematic diagram for illustrating a connection between systems using the commercial information ringback tone generating system on an intelligent network.

FIG.17 shows a procedure for generating the commercial information ringback tone using the commercial information ringback tone generating system on the intelligent network according to a seventh embodiment of the present invention.

The seventh embodiment includes the steps of: making a call the originating telephone to the originating switch system(120), requesting a connection to a service switching point(SSP) by sending an initial address message(IAM) from the originating switch system(121), requesting an analyzed information to a service control point(SCP) from the service switching point(SSP)(122), requesting a seize resource to the commercial information ringback tone generating system from the service control point(SCP)(123), returning the seize resource to the service control point from the commercial information ringback tone generating system(124), requesting a connect resource to the service switching point from the service control point(125), and requesting a connection to the commercial information ringback tone generating system by sending an initial address message(IAM) from the service switching point(126).

The method further goes through the steps of:
confirming the connection to the originating switch system
from the commercial information ringback tone generating
system through the service switching point by sending an
5 address complete message(ACM)(127), and answering a
receiver connection to the originating switch system by
sending an answer message from the service switching point
in case of the charged ringback tone type(127-1).

The method further goes through the steps of:
10 transmitting a commercial information ringback
tone(advertisement, music, news, stock, weather, fortune
etc) to the originating telephone from the commercial
information ringback tone generating system(128).

The method further goes through the steps of:
15 requesting an analyzed information return to the service
switching point from the service control point after the
first predetermined time(A-timeout) lapses since the
beginning of the commercial information ringback tone
transmission(129), requesting a connection to the receiving
20 switch system by sending an initial address message from
the service switching point(130), confirming the connection
to the service switching point by sending an address
complete message(ACM) from the receiving switch
system(131), ringing the receiving telephone by the
25 receiving switch system(132), sending a call progress
message(CPG) to the service switching point from the
receiving switch system(133). When a receiver receives a
call with the receiving phone(134), the method goes through

the steps of: replying a receiver connection(135) to the service switching point by sending an answer message(ANM) from the receiving switch system, and stopping the commercial information ringback tone by sending a release message(REL) to the commercial information ringback tone generating system from the service switching point(136).

The method further goes through the steps of: replying a receiver connection to the originating switch system by sending an answer message(ANM) from the service switching point in case of free ringback tone type(137).

The method further goes through the steps of: connecting a communication line between the originating telephone and the receiving telephone(138).

The method further goes through the steps of: requesting a release(140) to the service switching point from the originating switch system by sending a release message(REL) when the originating telephone is disconnected from the originating switch system(139), and confirming the release to the originating switch system from the service switching point by sending a release complete message(RLC)(141).

The method further goes through the steps of: requesting a release to the receiving switch system from the service switching point by sending a release message(REL)(142), confirming the release to the service switching point from the receiving switch system by sending a release complete message(RLC)(143), and finishing the communication by disconnecting the receiving telephone from

the receiving switch system(144).

When the SSP is utilized as an end switch, it works together with a voice communication switch device through interstation signal protocol(No.7, ISUP, R2MFC and so on),
5 or when the SSP is utilized as a local switch, it works together with a voice communication switch device through IPC(Inter-Process Communication).

FIG.18 is a schematic diagram for illustrating a connection between systems using the commercial information
10 ringback tone generating device in an IP(Intelligent Peripheral) on the intelligent network.

FIG.19 shows a procedure for generating the commercial information ringback tone using the commercial information ringback tone generating device in the IP on the
15 intelligent network according to an eighth embodiment of the invention.

The eighth embodiment includes the steps of:
connecting the originating telephone to the originating switch system(160), requesting a connection to a service
20 switching point by sending an initial address message(IAM) from the originating switch system(161), requesting an analyzed information to a service control point(SCP) from the service switching point(SSP)(162), requesting a seize resource to the intelligent peripheral from the service
25 control point(163), returning the seize resource to the service control point from the intelligent peripheral(164), requesting a connect resource to the service switching point from the service control point(165), and requesting

a connection to the intelligent peripheral by sending an initial address message(IAM) from the service switching point(166).

5 The method further goes through the steps of:
confirming the connection to the originating switch system from the intelligent peripheral through the service switching point by sending an address complete message(ACM) (167), and answering a receiver connection to the originating switch system by sending an answer
10 message(ANM) from the service switching point in case of charged ringback tone type(167-1).

15 The method further goes through the steps of:
transmitting a commercial information Ringback tone to the originating telephone from the commercial information
ringback tone generating system(168).

20 The method further goes through the steps of:
requesting an analyzed information return to the receiving telephone after the first predetermined time(A-timeout) lapses since the beginning of the commercial information
ringback tone transmission(169), requesting a connection to the receiving switch system by sending an initial address
25 message from the service switching point(170), confirming the connection to the service switching point by sending an address complete message from the receiving switch system(171), ringing the receiving telephone by the
receiving switch system(172), sending a call progress message to the service switching point from the receiving
switch system(173). When a receiver operates the receiving

phone(174), the method goes on the steps of: answering a receiver connection to the service switching point from the receiving switch system by sending an answer message(175) and stopping the commercial information ringback tone by sending a release message to the intelligent peripheral from the service switching point(176).

The method further goes through the steps of: answering a receiver connection to the originating switch system by sending an answer message from the service switching point in case of free of charge ringback tone type(177).

The method further goes through the steps of: connecting a communication line between the originating and the receiving telephones(178).

The method further goes through the steps of: requesting a release to the service switching point from the originating switch system by sending a release message(REL)(180) when the originating telephone is disconnected from the originating switch system(179), and confirming the release to the originating switch system from the service switching point by sending a release complete message(RLC)(181).

The method further goes through the steps of: requesting a release to the receiving switch system from the service switching point by sending a release message(REL)(182), confirming the release to the service switching point from the receiving switch system by sending a release complete message(RLC)(183), and finishing the

communication by disconnecting the receiving telephone from the receiving switch system(184).

Although the present invention is explained by using the No. 7 ISUP(ISDN User Part) among the inter-station
5 signal protocols, various signal protocols such as R2MFC, X. 25, TCP/IP, IPC and so on. (FIGs.5a, 5b, 7, 9a, 9b, 11, 13, 15, 17 and 19)

This invention makes a subscriber to hear the commercial information instead of the ringback tone and
10 provides any kinds of charge discount. Thus, the subscriber can hear the music, musical advertisement, news, stock information instead of the boring ringback tone from the switch system during a communication wait.

In general, a caller can communicate with the receiver
15 through a communication network by the ordinary telephones or mobile telephones. At this time, the commercial information such as advertisement, music, news, stock information instead of the ringback tone are generated and started from the time until the calling signal arrives on
20 the receiver.

Recently, the corded telephone, the cordless telephone, auxiliary services such as ARS, VMS, VISS and PPS, and the telephone number help service are kinds of
25 charged communication. However, when the invention is adapted, the communication charge discount or free of charge schedule can be given to the subscriber.

On the other hand, on the communication manage company' side, he can get a fee from the advertisement

provider and can provide the charged commercial information such as news, stock evaluations, music or the like so that an auxiliary benefit can be obtained and can be given a benefit users, communication company and advertisement provider by decreasing a communication fee.

The commercial information providing method according to the present invention can be adapted to communications between ordinary telephone, guide telephone, video telephone, mobile telephone, internet telephone, satellite telephone, or to the auxiliary services such as VMS, VISS or PPS(PrePaid Service).

Especially, in the case of the help service, the caller can wait while hearing the commercial information with music before he or she is connected to the counsellor.

In the case of the VMS(Voice Mailing Service), the subscriber can get through the voice mail box without any charge.

Communication connection methods includes those methods to call an ordinary phone number, to call the ordinary phone number by a pre-registered subscriber, and to call a special phone number, and system constructions for generating the commercial information ringback tone includes a device built-in-switch, a system built-out-switch and an intelligent network type, and protocols for connecting the commercial information ringback tone generating device, commercial information ringback tone generating system and the switch systems includes No.7 ISUP, R2MFC, IPC, X.25, TCP/IP, and

subscriber's information are classified into gender, age, region, time band, and earning.

INDUSTRIAL APPLICABILITY

5

As described above, the commercial information ringback tone generating method(a ringback service) and device according to the present invention can provide commercial information such as advertisement, music, news,
10 stock information during a communication wait to the caller instead of the ordinary ringback tone so that the subscriber can relax a boring state, save the communication charge and hear the commercial information in forms of voice, text or image, and the communication company can get
15 an additional benefit from providing the commercial information not only the communication charge even when the connection is failed, and finally the advertisement company can maximize the advertisement effect.

The present invention has been described in an
20 illustrative manner, and it is to be understood the terminology used is intended to be in the nature of description rather than of limitation. Many modifications and variations of the present invention are possible in light of the above teachings. Therefore, it is to be
25 understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described.

1. A method for generating voice/text/image commercial information through a communication system including a call process function carrying out a transfer of a commercial information to an originating telephone instead of a ringback tone or a guide message during a communication wait till a receiving side is received after the calling from the originating telephone of a subscriber to a receiving side(a receiving telephone of a subscriber or a receiving communication system) is completed, the method comprising the steps of:

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(b) checking whether the receiving telephone accepts the connection request(S6), checking whether a second predetermined time(B-timeout) lapses since the commercial information ringback tone is provided if the connection request is not accepted(S11), checking whether a telephone connection fails if within the second predetermined time(S14) and continuously providing the commercial information ringback tone to the originating telephone if the telephone connection does not fail(S5);

(c) stopping the providing of the commercial information ringback tone if the telephone connection is made in the step S6(S7), connecting a communication line between the originating telephone and the receiving telephone(S8), checking whether the communication is finished(S9), and disconnecting the communication line if the communication finishes(S10);

(d) stopping the sending of the commercial information ringback tone if the second predetermined time lapses since the connection request in the step S11(S12), and connecting a relay line between an originating switch system and a receiving switch system(S13); and

(e) stopping the sending of the commercial information ringback tone if the connection request fails(S15), releasing the relay line between the originating switch and the receiving switch(S16), checking whether a next connection request is(S17), and beginning to transmit the commercial information to the originating telephone from the commercial information ringback tone generating

system(S3).

2. The method as recited in claim 1, further comprising the steps of requesting the connection to the receiving telephone after the first predetermined time(A-timeout) lapses in the step S4, stopping the sending of the commercial information ringback tone and beginning to transmit an original ringback tone or the guide message to the originating telephone when a ringback tone hearing mode is set(S18), checking whether the receiving telephone accepts the request(S19), stopping the providing of the ringback tone or the guide message if the request is accepted(S20), connecting the communication line between the originating telephone and the receiving telephone(S21), checking whether the communication is finished(S22), and disconnecting the communication line between the originating telephone and receiving telephone.

3. The method as recited in claim 1, wherein in the step (a), when a subscriber calls a receiver's phone number by using an ordinary telephone, a mobile telephone including any one of CDMA, PCS, TDMA, GSM, AMPS, and IMT-2000 type telephones, a video telephone, a satellite telephone and an internet telephone, when a pre-registered subscriber calls the receiver's phone number by using the receiver's phone number, when a subscriber calls a special number, or a subscriber calls an automatic response application system(ARS(Automatic Response System),

VMS(Voice Mailing System), VISS(Voice Information Service System), PPS(PrePaid System) etc), the commercial information providing service sends the commercial information in forms of melody, advertisement ment or advertisement image to the originating telephone in at least one form of a voice like melody, a text like advertisement, and/or an image like advertisement image during a communication wait.

4. The method as recited in claim 1, further comprising the steps of:

in case where the commercial information ringback tone generating system is used as a toll station in the originating switch system,

requesting a connection to the commercial information ringback tone generating system by sending an initial address message(IAM) from the originating switch system when the originating telephone makes a call to the originating switch system, confirming the connection from the commercial information ringback tone generating system by sending an address complete message(ACM) to the originating switch system, replying a receiver connection by sending an answer message(ANM) from the commercial information ringback tone generating system to the originating switch system if a charged ringback tone type is set, transmitting the commercial information ringback tone from the commercial information ringback tone generating system to the originating telephone, stopping

the commercial information ringback tone when the communication connection fails after the second predetermined time(B-timeout) lapses;

requesting a connection for a receiving telephone to
5 a receiving switch system from the commercial information
ringback tone generating system by sending the initial
address message(IAM) after the first predetermined time(A-
timeout) lapses since the beginning of the commercial
transmission, confirming the connection from the receiving
10 switch system by sending the address complete message(ACM)
to the commercial information ringback tone generating
system, ringing the receiving telephone from the receiving
switch system, sending a call progress message(CPG) from
the receiving switch system to the commercial information
15 ringback tone generating system, answering a receiving
telephone connection to the commercial information ringback
tone generating system from the receiving switch system by
sending an answer message(ANM) when a receiver receives a
call with the receiving telephone, answering the receiving
20 telephone connection to the originating switch system from
the commercial information ringback tone generating system
by stopping the sending of the commercial information
ringback tone and replying a receiver connection by sending
the answer message in case of free ringback tone type, and
25 stopping the sending of the commercial information ringback
tone to the originating switch system from the commercial
information ringback tone generating system in case of the
charged ringback tone type;

connecting the communication line between the originating telephone and the receiving telephone; and

requesting a release to the commercial information ringback tone generating system from the originating switch system by sending a release message(REL) when the
5 originator disconnects the communication, confirming the release to the originating switch system from the commercial information ringback tone generating system by sending a release complete message(RLC), requesting a
10 release to the receiving switch system from the commercial information ringback tone generating system by sending a release message(REL), confirming the release to the commercial information ringback tone generating system from the receiving switch system by sending a release complete
15 message(RLC), and finishing the communication by disconnecting the receiving telephone from the receiving switch system.

5. The method as recited in claim 1, further comprising
20 the steps of:

in a case where the commercial information ringback tone generating system is used as an end station in the originating switch system,

requesting a connection to the commercial information
25 ringback tone generating system by sending an initial address message(IAM) from the originating switch system when the originating telephone makes a call to the originating switch system, confirming the connection from

the commercial information ringback tone generating system by sending an address complete message(ACM) to the originating switch system,

5 replying a receiver connection from the commercial information ringback tone generating system to the originating switch system by sending an answer message(ANM) in case of a charged ringback tone type;

10 transmitting the commercial information from the commercial information ringback tone generating system to the originating telephone, stopping the commercial information ringback tone when the communication connection fails after the second predetermined time(B-timeout) lapses;

15 requesting a connection for a receiving telephone to a receiving switch system from the originating switch system by sending the initial address message(IAM) after the first predetermined time(A-timeout) lapses since the beginning of the commercial information transmission, confirming the connection from the receiving switch system
20 by sending the address complete message(ACM) to the originating switch system, ringing the receiving telephone from the receiving switch system, sending a call progress message(CPG) from the receiving switch system to the originating switch system, replying a receiving telephone
25 connection to the originating switch system from the receiving switch system by sending an answer message(ANM) when a receiver receives a call with the receiving telephone, and requesting a stop of the commercial

information ringback tone from the originating switch system by sending a release message to the commercial information ringback tone generating system;

5 confirming the release to the originating switch system from the commercial information ringback tone generating system by sending a release complete message(RLC);

connecting the communication line between the originating telephone and the receiving telephone; and

10 requesting a release to the receiving switch system from the originating switch system by sending a release message(REL) when the originator disconnects the communication, confirming the release to the originating switch system from the receiving switch system by sending
15 a release complete message(RLC), and finishing the communication by disconnecting the receiving telephone from the receiving switch system.

6. The method as recited in claim 1, further comprising
20 the steps of:

in a case where the commercial information ringback tone generating device in the originating switch system is used so as to generate commercial information ringback tone,

25 making a call to the originating switch system by using the originating telephone, requesting a connection to the commercial information ringback tone generating device from the originating switch system, and replying the

connection from the commercial information ringback tone generating device to the originating switch system;

transmitting the commercial information ringback tone to the originating telephone from the commercial information ringback tone generating device and when the
5 connection fails after the second predetermined time(B-timeout) lapses, stopping the commercial information ringback tone;

requesting a connection to the receiving switch system
10 by sending an initial address message(IAM) from the originating switch system after a first predetermined time(A-timeout) lapses since the beginning of the commercial information ringback tone transmission, confirming the connection to the originating switch system
15 by sending an address complete message(ACM) from the receiving switch system, ringing the receiving telephone from the receiving switch system, sending a call progress message(CPG) from the receiving switch system to the originating switch system, replying a receiver connection
20 to the originating switch system by sending an answer message(ANM) from the receiving switch system when a receiver receives a call with the receiving telephone, and requesting a release of the commercial information ringback tone to the commercial information ringback tone generating
25 device from the originating switch system;

connecting a communication line between the originating telephone and the receiving telephone; and

requesting a release to the receiving switch system

from the originating switch system by sending a release message(REL) when the originating telephone is disconnected from the originating switch system, confirming the release to the originating switch system from the receiving switch system by sending a release complete message(RLC), and finishing the communication by disconnecting the receiving telephone from the receiving switch system.

7. The method as recited in claim 1, further comprising the steps of:

in a case where the commercial information ringback tone generating device outside of the receiving switch system is used so as to generate commercial information ringback tone,

making a call to the originating switch system by using the originating telephone, requesting a connection to the receiving switch system by sending an initial address message(IAM) from the originating switch system, requesting a connection to the commercial information ringback tone generating system by sending an initial address message(IAM) from the receiving switch system, confirming the connection from the commercial information ringback tone generating device to the receiving switch system by sending an address complete message(ACM), confirming the connection to the originating switch system by sending an ACM from the receiving switch system, replying a connection to the receiving switch system from the commercial information ringback tone generating system by sending an

answer message(ANM), and replying a connection to the originating switch system from the receiving switch system by sending an answer message(ANM);

transmitting the commercial information ringback tone to the originating telephone from the commercial information ringback tone generating system, and when the connection fails after the second predetermined time(B-timeout) lapses, stopping the commercial information ringback tone;

requesting a connection to the receiving switch system by sending an initial address message(IAM) from the commercial information ringback tone generating system after the first predetermined time(A-timeout) lapses since the beginning of the commercial information ringback tone transmission, confirming the connection to the commercial information ringback tone generating system by sending an address complete message(ACM) from the receiving switch system, ringing the receiving telephone from the receiving switch system, sending a call progress message(CPG) from the receiving switch system to the commercial information ringback tone generating system, replying a receiver connection to the commercial information ringback tone generating system by sending an answer message(ANM) from the receiving switch system when a receiver receives a call with the receiving telephone;

stopping the commercial information ringback tone to the originating switch system from the commercial information ringback tone generating system and replying a

connection by sending an answer message(ANM) in case of
free ringback tone type, and stopping the commercial
information ringback tone to the originating switch system
from the commercial information ringback tone generating
5 system in case of charged ringback tone type;

connecting a communication line between the
originating telephone and the receiving telephone; and

requesting a release of the commercial information
Ringback tone to the commercial information Ringback tone
10 generating system from the originating switch system by
sending a release message(REL) when the receiving telephone
is disconnected from the originating switch system,
confirming the release to the originating switch system
from the commercial information ringback tone generating
15 system by sending a release complete message(RLC),
requesting a release to the receiving switch system from
the commercial information ringback tone generating system
by sending a release message(REL), confirming the release
to the commercial information ringback tone generating
20 system from the receiving switch system by sending a
release complete message(RLC), and finishing the
communication by disconnecting the receiving telephone
from the receiving switch system.

25 8. The method as recited in claim 1, further comprising
the steps of:

in a case where the commercial information ringback
tone generating system is set as an end station outside of

the receiving switch system,

making a call to the originating switch system by using the originating telephone, requesting a connection to the receiving switch system by sending an initial address message(IAM) from the originating switch system, requesting a connection to the commercial information ringback tone generating system by sending an initial address message(IAM) from the receiving switch system, confirming a connection from the commercial information ringback tone generating system to the receiving switch system by sending an address complete message(ACM), confirming a connection from the receiving switch system to the originating switch system by sending an address complete message(ACM), replying a receiver connection to the receiving switch system from the commercial information ringback tone generating system by sending an answer message(ANM) in case of charged ringback tone type, and replying a receiver connection to the originating switch system from the receiving switch system by sending an answer message(ANM);

transmitting the commercial information ringback tone to the originating telephone from the commercial information ringback tone generating system, and when the connection fails after the second predetermined time(B-timeout) lapses, stopping the commercial information ringback tone;

requesting a release and requesting a stop of the commercial information ringback tone to the commercial information ringback tone generating system from the

the receiving switch system,

making a call to the originating switch system by using the originating telephone, requesting a connection to the receiving switch system by sending an initial address message(IAM) from the originating switch system, requesting a connection to the commercial information ringback tone generating system by sending an initial address message(IAM) from the receiving switch system, confirming a connection from the commercial information ringback tone generating system to the receiving switch system by sending an address complete message(ACM), confirming a connection from the receiving switch system to the originating switch system by sending an address complete message(ACM), replying a receiver connection to the receiving switch system from the commercial information ringback tone generating system by sending an answer message(ANM) in case of charged ringback tone type, and replying a receiver connection to the originating switch system from the receiving switch system by sending an answer message(ANM);

transmitting the commercial information ringback tone to the originating telephone from the commercial information ringback tone generating system, and when the connection fails after the second predetermined time(B-timeout) lapses, stopping the commercial information ringback tone;

requesting a release and requesting a stop of the commercial information ringback tone to the commercial information ringback tone generating system from the

receiving switch system by sending a release message(REL)
when the receiving telephone ringing and a receiver
receives a call with the receiving telephone after the
first predetermined time(A-timeout) lapses since the
5 beginning of the commercial information ringback tone
transmission;

confirming a release to the receiving switch system by
sending a release complete message(RLC) from the commercial
information ringback tone generating system and replying a
10 receiver connection to the originating switch system by
sending an answer message(ANM) from the receiving switch
system in case of free ringback tone type;

connecting the communication line between the
originating telephone and the receiving telephone; and

15 requesting a release to the receiving switch system
from the originating switch system by sending a release
message(REL) when the originating telephone is disconnected
from the originating switch system, confirming the release
to the originating switch system from the receiving switch
20 system by sending a release complete message(RLC), and
finishing the communication by disconnecting the receiving
telephone from the receiving switch system.

9. The method as recited in claim 1, further comprising
25 the steps of:

in a case where the commercial information ringback
tone is generated through the commercial information
ringback tone generating device in the receiving switch

system,

making a call to the originating switch system by
using the originating telephone, requesting a connection to
the receiving switch system by sending an initial address
5 message(IAM) from the originating switch system, confirming
the connection to the originating switch system by sending
an address complete message(ACM) from the receiving switch
system, requesting a connection to the commercial
information ringback tone generating device from the
10 receiving switch system, replying the connection to the
receiving switch system from the commercial information
ringback tone generating device, and answering a connection
to the originating switch system from the receiving switch
system by sending an answer message(ANM) in case of charged
15 ringback tone type;

transmitting the commercial information ringback tone
to the originating telephone from the commercial
information ringback tone generating device in the
receiving switch system;

20 sending a call progress message(CPG) to the
originating switch system from the receiving switch system
when the receiving telephone rings by the receiving switch
system after the first predetermined time(A-timeout) lapses
since the beginning of the commercial information ringback
25 tone transmission from the commercial information ringback
tone generating device to the originating telephone,
requesting a stop of the commercial information ringback
tone to the commercial information ringback tone generating

system,

making a call to the originating switch system by using the originating telephone, requesting a connection to the receiving switch system by sending an initial address message(IAM) from the originating switch system, confirming the connection to the originating switch system by sending an address complete message(ACM) from the receiving switch system, requesting a connection to the commercial information ringback tone generating device from the receiving switch system, replying the connection to the receiving switch system from the commercial information ringback tone generating device, and answering a connection to the originating switch system from the receiving switch system by sending an answer message(ANM) in case of charged ringback tone type;

transmitting the commercial information ringback tone to the originating telephone from the commercial information ringback tone generating device in the receiving switch system;

sending a call progress message(CPG) to the originating switch system from the receiving switch system when the receiving telephone rings by the receiving switch system after the first predetermined time(A-timeout) lapses since the beginning of the commercial information ringback tone transmission from the commercial information ringback tone generating device to the originating telephone, requesting a stop of the commercial information ringback tone to the commercial information ringback tone generating

device from the commercial information ringback tone generating device when a receiver receives a call with the receiving telephone;

replying a receiver connection to the originating switch system from the receiving switch system by sending an answer message (ANM) in case of free ringback tone type;

connecting the communication line between the originating telephone and the receiving telephone; and

requesting a release to the receiving switch system from the originating switch system by sending a release message (REL) when the originating telephone is disconnected from the originating switch system, confirming the release to the originating switch system from the receiving switch system by sending a release complete message (RLC), and finishing the communication by disconnecting the receiving telephone from the receiving switch system.

10. The method as recited in claim 1, further comprising the steps of:

in a case where a commercial information announcement is provided by using commercial information announcement generating system,

requesting a connection to the commercial information announcement generating system from the originating switch system by sending an initial address message (IAM) when the originating telephone makes a call to the originating switch system, confirming the connection to the originating switch system by sending an address complete message (ACM)

from the commercial information announcement generating system, and replying a receiver connection to the originating switch system by sending an answer message (ANM) from the commercial information announcement generating system in case of charged announcement type;

transmitting the commercial information announcement from the commercial information announcement generating system to the originating telephone and stopping the commercial information announcement when the communication connection fails after the second predetermined time (B-timeout) lapses;

requesting a connection to the receiving switch system or an automatic response application system (ARS, VMS etc) from the commercial information announcement generating system by sending an initial address message (IAM) after the first predetermined time (A-timeout) lapses since the beginning of the commercial information transmission, confirming the connection to the commercial information announcement generating system by sending an address complete message (ACM) from the receiving switch system or the automatic response application system, sending a call progress message (CPG) to the commercial information announcement generating system from the receiving switch system or the automatic response application system after the receiving switch telephone rings by the receiving switch system the receiving telephone, and when a receiver makes a call with the receiving telephone, answering a receiver connection to the

commercial information announcement generating system from the receiving switch system or the automatic response application system;

5 replying a receiver connection to the originating switch system from the commercial information announcement generating system by stopping the commercial information announcement and sending an answer message (ANM) in case of free of charge announcement type, stopping the commercial information announcement in case of charged announcement type;

10 connecting the communication line between the originating telephone and the receiving telephone; and

requesting a release to the commercial information announcement generating system from the originating switch system by sending a release message (REL) when the
15 originating telephone is disconnected from the originating switch system, confirming the release to the originating switch system from the commercial information announcement generating system by sending a release complete message (RLC), requesting a release to the receiving switch
20 system or the automatic response application system by sending a release message (REL) from the commercial information announcement generating system, confirming the release to the commercial information announcement
25 generating system from the receiving switch system or the automatic response application system by sending a release complete message (RLC), and finishing the communication by disconnecting the receiving telephone from the receiving

switch system or the automatic response application system.

11. The method as recited in claim 1, further comprising the steps of:

5 in a case where a commercial information announcement is provided by using commercial information announcement generating device and an automatic response applied device (ARS, VMS etc) in an automatic response application system,

10 requesting a connection to the automatic response application system from the originating switch system by sending an initial address message (IAM) when the originating telephone makes a call to the originating switch system, confirming the connection to the originating
15 switch system by sending an address complete message (ACM) from the automatic response application system, requesting a connection to the commercial information announcement generating device from the automatic response application system, replying a connection to the automatic response
20 application system from the commercial information announcement generating device, and replying a receiver connection to the originating switch system by sending an answer message from the automatic response application system in case of charged announcement type;

25 transmitting the commercial information announcement from the commercial information announcement generating device to the originating telephone and requesting a stop of the commercial information announcement after the first

predetermined time(A-timeout) lapses;

requesting a connection to an automatic response
applied device including ARS or VMS etc from the automatic
response application system, replying a connection to the
5 automatic response applied system from the automatic
response applied device, and replying a receiver connection
to the originating switch system by sending an answer
message(ANM) from the automatic response application system
in case of free of charge announcement type;

10 connecting a communication line between the
originating telephone and the automatic response applied
device; and

requesting a release to the automatic response
application system from the originating switch system by
15 sending a release message(REL) when the originating
telephone is disconnected from the originating switch
system, confirming the release to the originating switch
system from the automatic response application system by
sending a release complete message(RLC), and disconnecting
20 the automatic response applied device from the automatic
response application system.

12. The method as recited in claim 1, further comprising
the steps of:

25 in a case where the commercial information ringback
tone is generated by using the commercial information
ringback tone generating system in an intelligent network,
making a call the originating telephone to the

originating switch system, requesting a connection to a service switching point(SSP) by sending an initial address message(IAM) from the originating switch system, requesting an analyzed information to a service control point(SCP)
5 from the service switching point, requesting a seize resource to the commercial information ringback tone generating system from the service control point, returning the seize resource to the service control point from the commercial information ringback tone generating system,
10 requesting a connect resource to the service switching point from the service control point, and requesting a connection to the commercial information ringback tone generating system by sending an initial address message(IAM) from the service switching point;

15 confirming the connection to the originating switch system from the commercial information ringback tone generating system through the service switching point by sending an address complete message(ACM), and answering a receiver connection to the originating switch system by
20 sending an answer message from the service switching point in case of charged ringback tone type;

transmitting a commercial information ringback tone to the originating telephone from the commercial information ringback tone generating system;

25 requesting an analyzed information return to the service switching point from the service control point after the first predetermined time(A-timeout) lapses since the beginning of the commercial information ringback tone

transmission, requesting a connection to the receiving switch system by sending an initial address message(IAM) from the service switching point, confirming the connection to the service switching point by sending an address complete message(ACM) from the receiving switch system, 5 ringing the receiving telephone by the receiving switch system, sending a call progress message(CPG) to the service switching point from the receiving switch system, replying a receiver connection to the service switching point by sending an answer message(ANM) from the receiving switch 10 system when a receiver receives a call with the receiving phone, and stopping the commercial information ringback tone by sending a release message(REL) to the commercial information ringback tone generating system from the service switching point; 15

replying a receiver connection to the originating switch system by sending an answer message(ANM) from the service switching point in case of free of charge ringback tone type;

20 connecting the originating telephone and the receiving telephone; and

requesting a release to the service switching point from the originating switch system by sending a release message(REL) when the originating telephone is disconnected 25 from the originating switch system, confirming the release to the originating switch system from the service switching point by sending a release complete message(RLC), requesting a release to the receiving switch system from

the service switching point by sending a release message(REL), confirming the release to the service switching point from the receiving switch system by sending a release complete message(RLC), and finishing the communication by disconnecting the receiving telephone from the receiving switch system.

13. The method as recited in claim 1, further comprising the steps of:

in a case where the commercial information ringback tone is generated by using the commercial information ringback tone generating device of the intelligent peripheral(IP) in an intelligent network,

connecting the originating telephone to the originating switch system, requesting a connection to a service switching point by sending an initial address message(IAM) from the originating switch system, requesting an analyzed information to a service control point(SCP) from the service switching point(SSP), requesting a seize resource to the intelligent peripheral(IP) from the service control point, returning the seize resource to the service control point from the intelligent peripheral, requesting a connect resource to the service switching point from the service control point, and requesting a connection to the intelligent peripheral by sending an initial address message(IAM) from the service switching point;

confirming the connection to the originating switch system from the intelligent peripheral through the service

switching point by sending an address complete message(ACM), and replying a receiver connection to the originating switch system by sending an answer message(ANM) from the service switching point in case of charged ringback tone type;

transmitting a commercial information ringback tone to the originating telephone from the commercial information ringback tone generating system;

requesting an analyzed information return to the receiving telephone after the first predetermined time(A-timeout) lapses since the beginning of the commercial information ringback tone transmission, requesting a connection to the receiving switch system by sending an initial address message(IAM) from the service switching point, confirming the connection to the service switching point by sending an address complete message(ACM) from the receiving switch system, ringing the receiving telephone by the receiving switch system, sending a call progress message(CPG) to the service switching point from the receiving switch system, answering a receiver connection to the service switching point from the receiving switch system by sending an answer message(ANM) when a receiver operates the receiving phone, and stopping the commercial information ringback tone by sending a release message to the intelligent peripheral from the service switching point;

answering a receiver connection to the originating switch system by sending an answer message from the service

switching point in case of free of charge ringback tone type;

connecting the originating telephone and the receiving telephone; and

5 requesting a release to the service switching point from the originating switch system by sending a release message(REL) when the originating telephone is disconnected from the originating switch system, confirming the release to the originating switch system from the service switching
10 point by sending a release complete message(RLC), requesting a release to the receiving switch system from the service switching point by sending a release message(REL), confirming the release to the service switching point from the receiving switch system by sending
15 a release complete message(RLC), and finishing the communication by disconnecting the receiving telephone from the receiving switch system.

14. The method as recited in claim 1, wherein a
20 subscriber connection methods includes methods to make a call an ordinary phone number of normal subscriber, to make a call the ordinary phone number of the receiver by a pre-registered subscriber, and to call a special phone number, and system constructions for generating the
25 commercial information ringback tone in forms of a voice, a text or an image includes a device built-in-switch type, a system built-out-switch type and an intelligent network type, and protocols for connecting the commercial

17. The method as recited in claim 1, wherein the call process function transmitting to the originating telephone of the subscriber the commercial information excluding the ringback tone or the guide message instead of the ringback tone during a communication wait, is applied to at least one of the patterns possible to be combined with an original ringback tone or an original guide message and the commercial information ringback tone, such as a first pattern for transmitting the commercial information to the originating telephone during a communication wait, a second pattern for transmitting the commercial information to the originating telephone after transmitting the ringback tone or the guide message with a fixed count during a communication wait, a third pattern for transmitting the ringback tone or the guide message to the originating telephone after transmitting the commercial information for a predetermined time during a communication wait, a fourth pattern for transmitting the ringback tone or the guide message to the originating telephone after transmitting the commercial information to the originating telephone for the predetermined time since the ringback tone or the guide message with a fixed count transmits during a communication wait, and a fifth pattern for simultaneously transmitting the ringback tone or the guide message and the commercial information ringback tone.

18. An information generating device having a

communication system including an originating telephone, a receiving telephone including an ordinary telephone, a mobile telephone(CDMA, PCS, TDMA, GSM AMPS, IMT-2000 type etc) a video phone, a satellite phone, an internet phone etc, a subscriber communication line and a relay communication line which are positioned in a switch system, the device comprising:

a commercial information server for providing commercial information including advertisement, music, composite information(news, weather, sports, stock information, humor, entertainment etc), subscriber information(bio-rhythm, fortune, position, entertainer information, stock, fee information etc);

a voice/text/image/commercial information ringback tone generating device for providing a commercial information ringback tone in forms of a voice; a text, or an image from the commercial information server to the originating telephone which is on wait through the subscriber communication line, the voice/text/image commercial information ringback tone generating device being provided in the switch system;

a voice/text/image commercial information ringback tone generating system for providing a commercial information ringback tone in forms of a voice, a text, or an image from the commercial information server to the originating telephone which is on wait through the relay communication line and the subscriber communication line, the voice/text/image commercial information ringback tone

generating system being provided outside of the switch system; and

5 a subscriber's private information server for providing subscriber's private information individually in terms of regions, gender, ages and time bands, the commercial information ringback tone is provided depending on the subscriber's private information.

10 19. An information generating device as recited in claim 18, wherein the device generates the commercial information in forms of the voice, the text or the image from an automatic response system(ARS), a voice mailing system(VMS), from a voice information service system(VISS) etc to an originating telephone of subscriber during
15 communication wait.

20

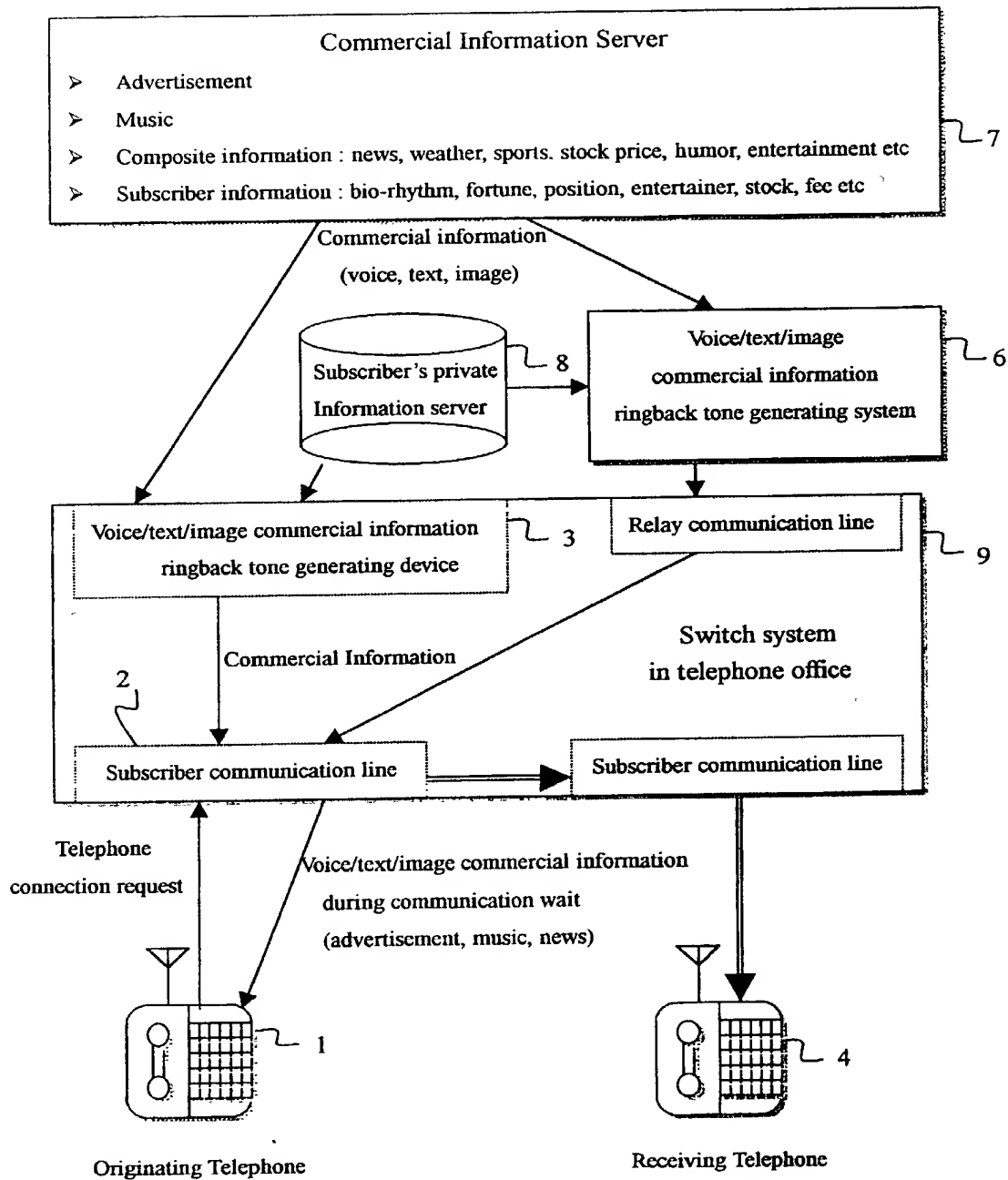
25

$$= \begin{pmatrix} -\frac{\sqrt{2}}{2} & \frac{\sqrt{2}}{2} \\ \frac{\sqrt{2}}{2} & \frac{\sqrt{2}}{2} \end{pmatrix} \begin{pmatrix} \frac{\sqrt{2}}{2} & \frac{\sqrt{2}}{2} \\ -\frac{\sqrt{2}}{2} & \frac{\sqrt{2}}{2} \end{pmatrix} = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$$

Voice/text/image commercial information generating method and device during a communication is on wait. The method includes the steps of: checking a telephone call, connecting with a commercial information ringback tone generating system/device at an originating or a receiving communication system when the call is detected, beginning to transmit a commercial information in forms of voice/text/image instead of the original ringback tone or a guide message to an originating telephone from the commercial information ringback tone generating system during a communication wait, requesting a connection to a receiving telephone from the commercial information ringback tone generating system after an A-timeout lapses, continuously transmitting the commercial information to the originating telephone, checking whether the receiving telephone accepts the connection request, stopping the providing of the commercial information ringback tone if the telephone connection is made, connecting a communication line between the originating and the receiving telephones, checking whether the communication is finished, and disconnecting the communication line if the communication finishes.

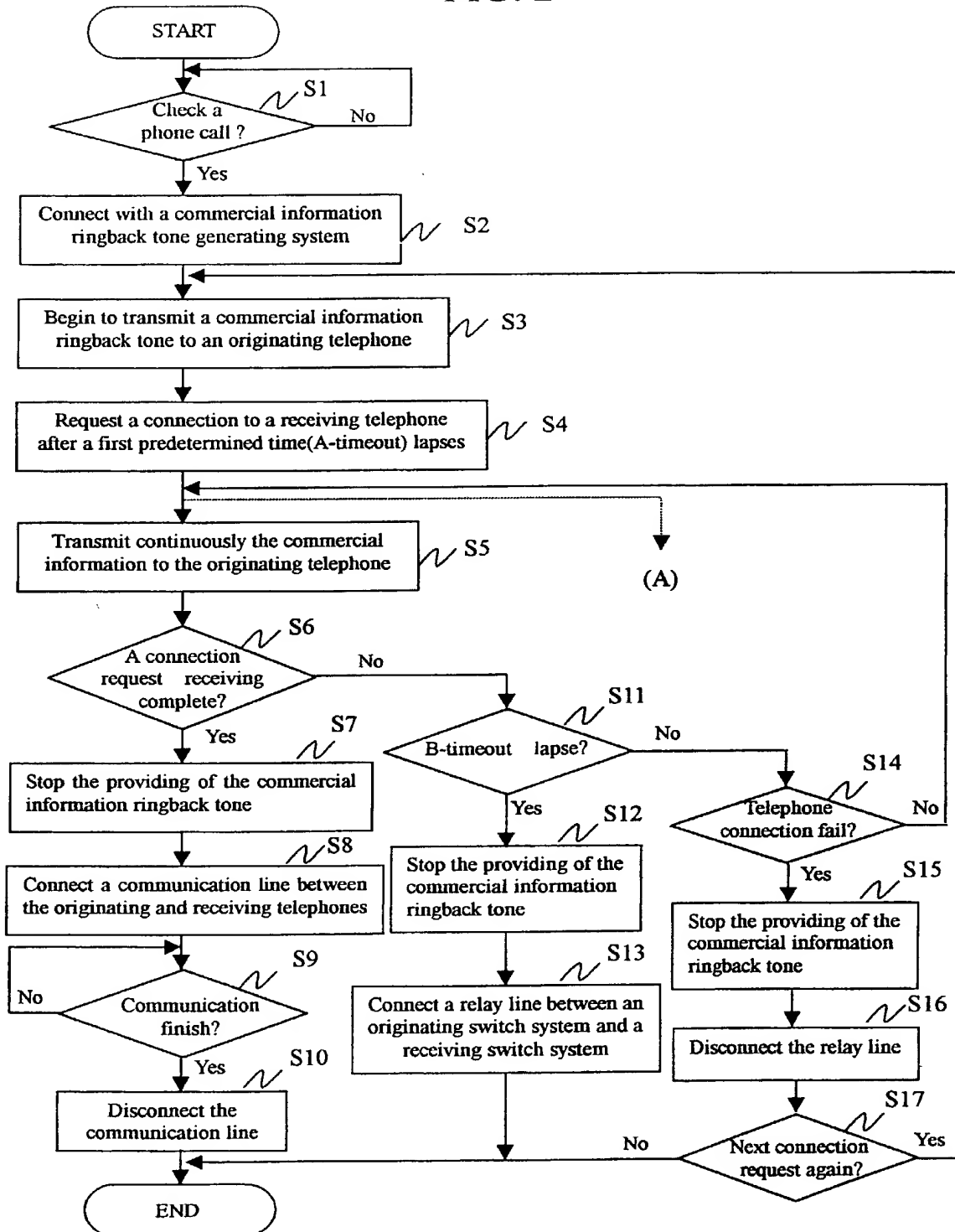
1/21

FIG. 1



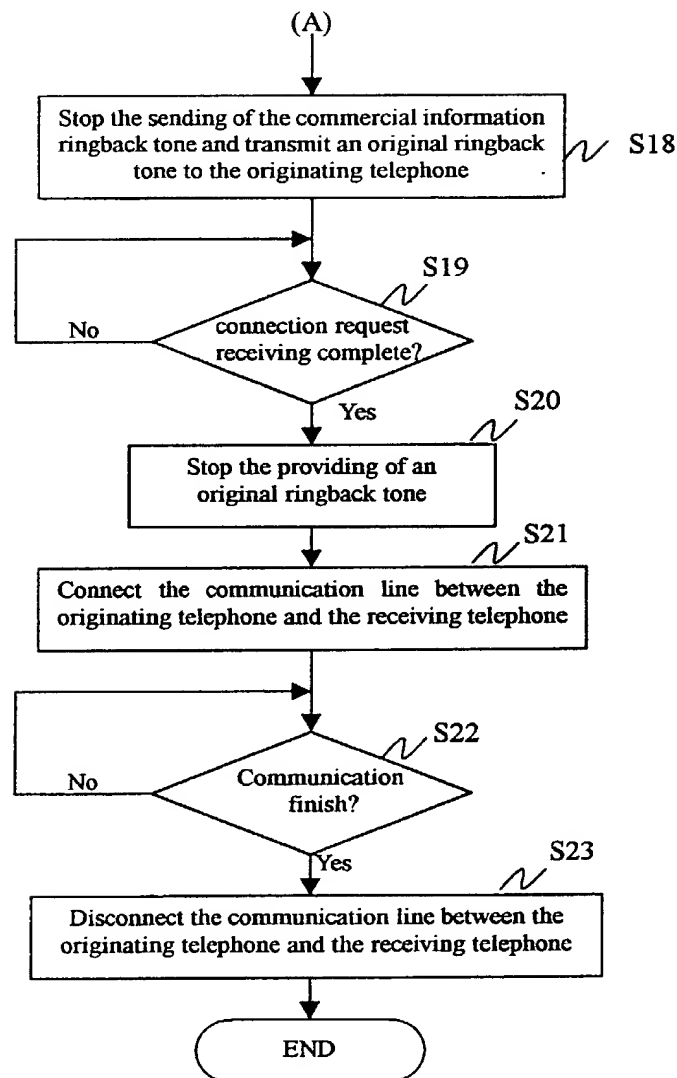
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FIG. 2



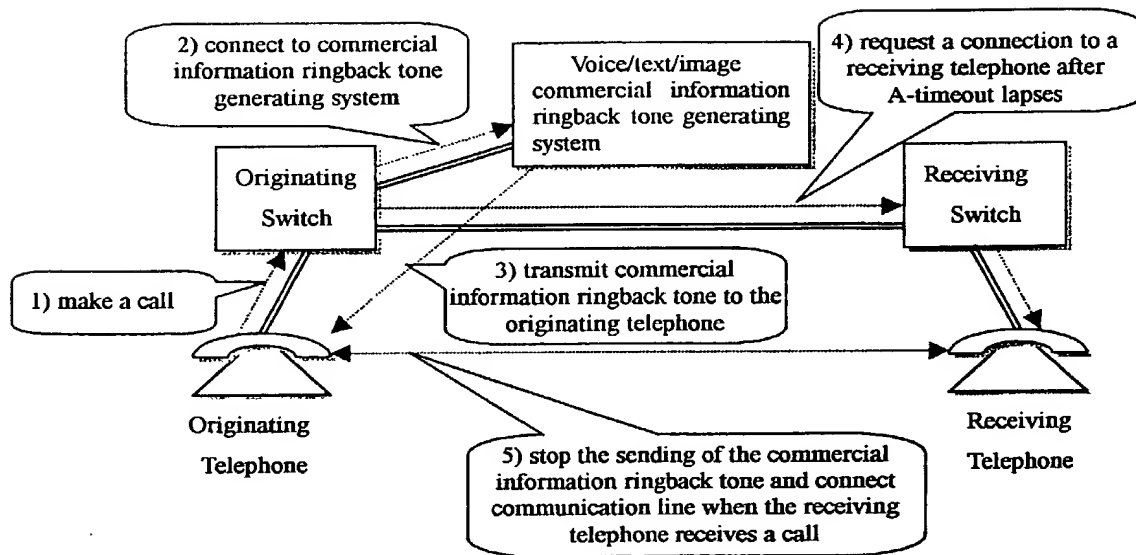
3/21

FIG. 3



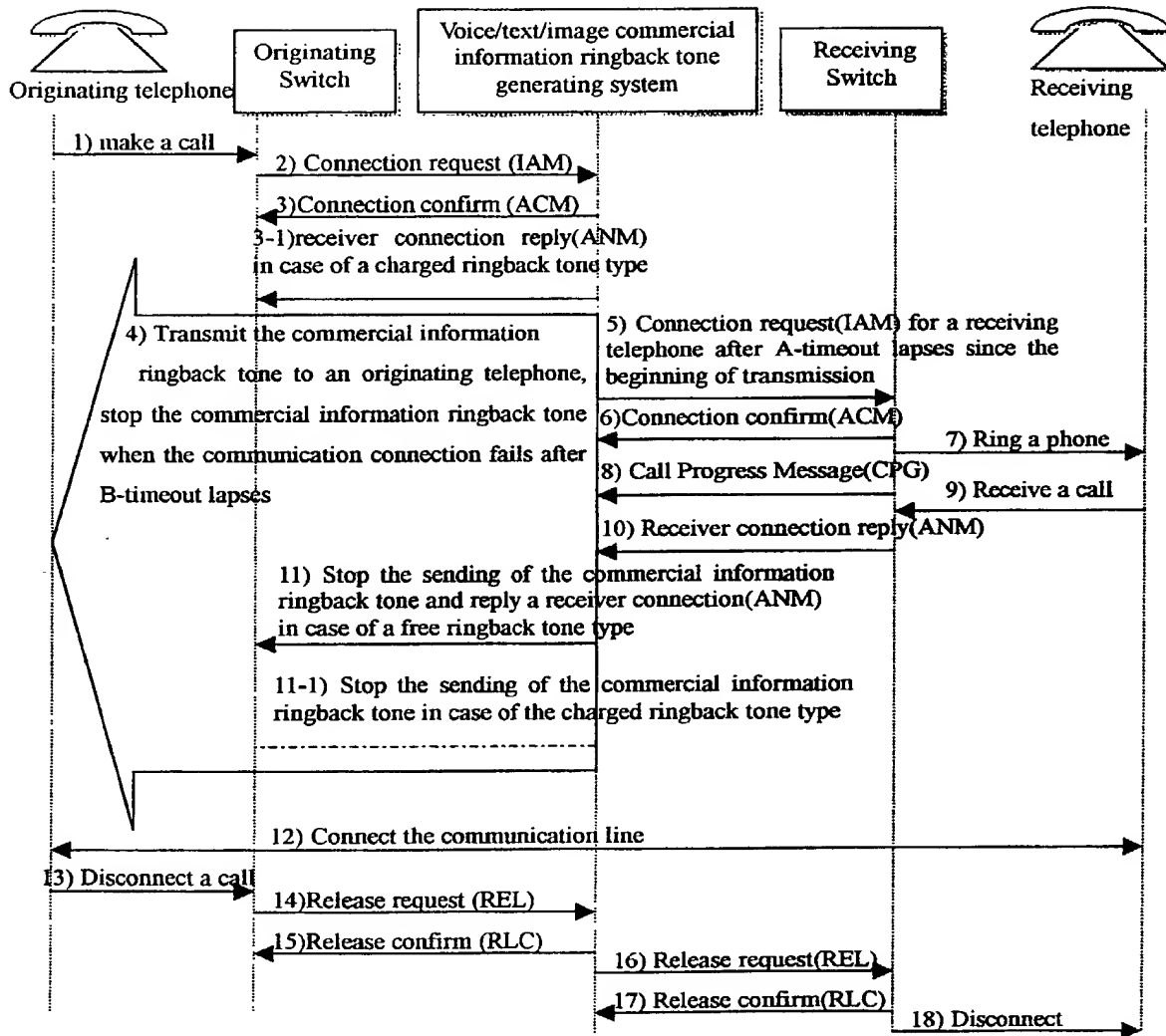
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FIG. 4

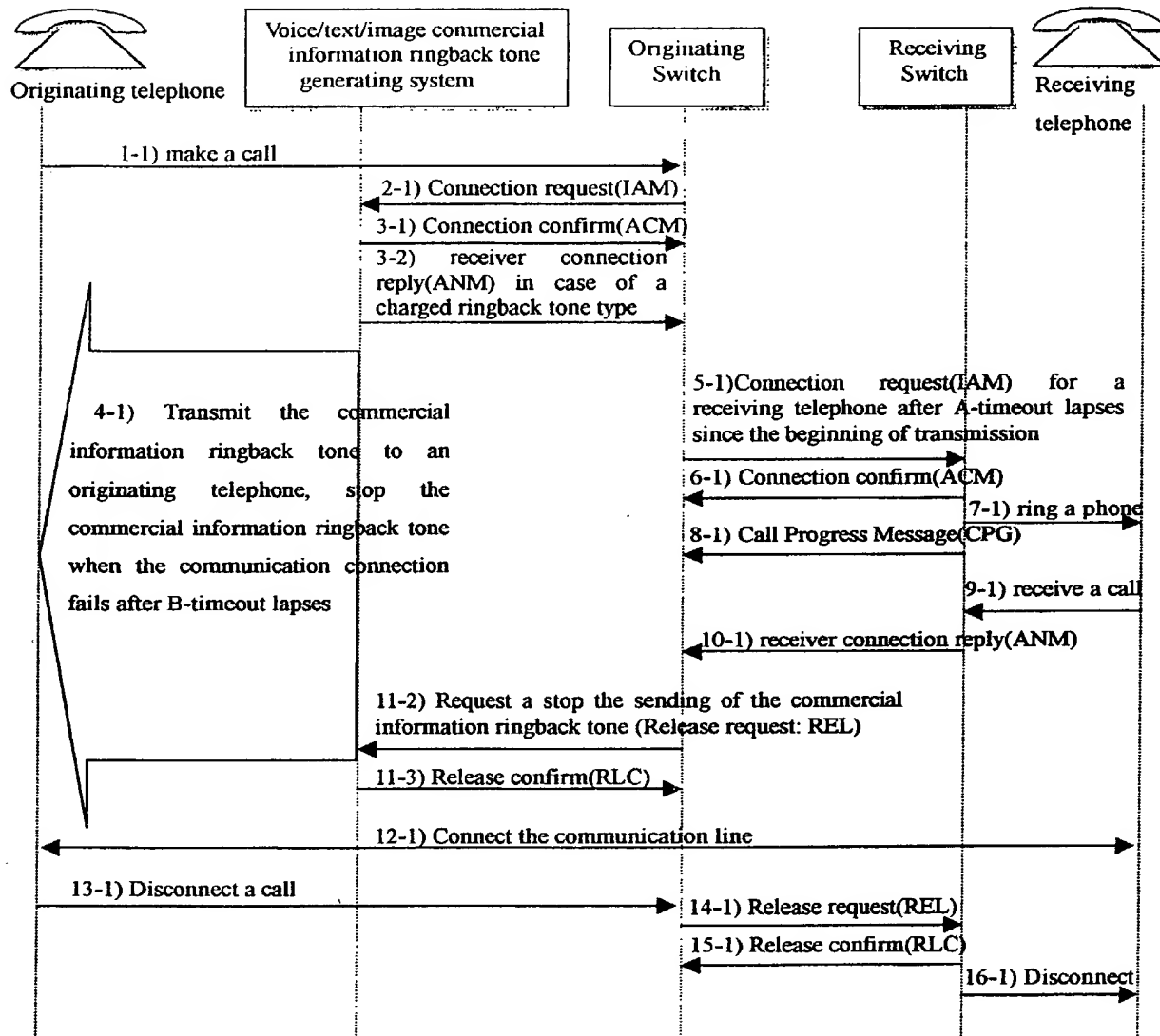


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FIG. 5a

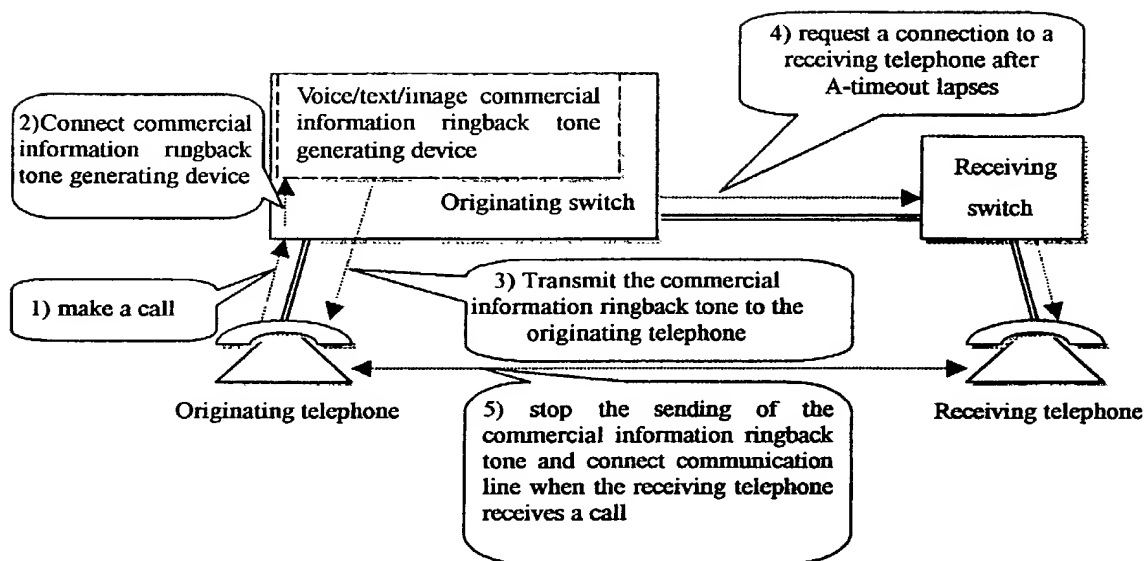


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FIG. 5b



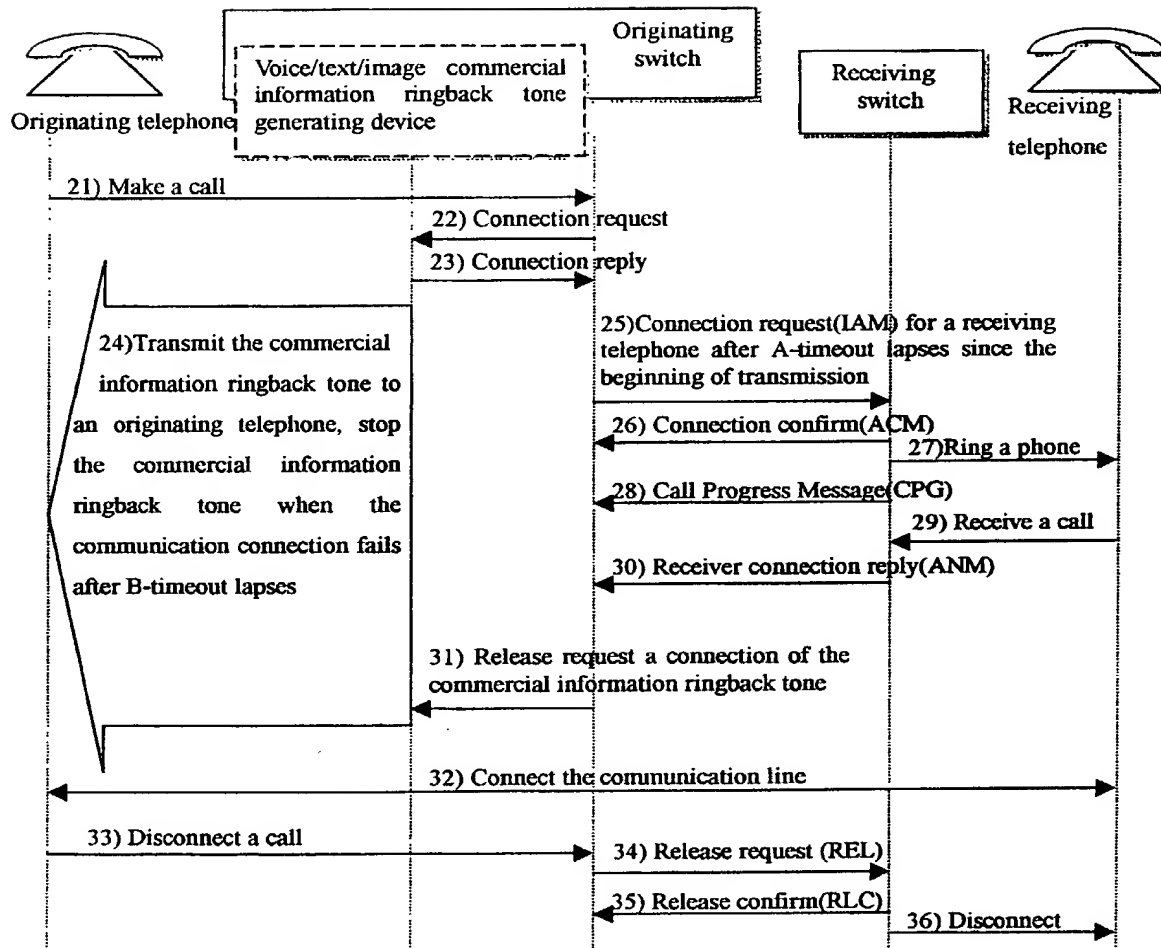
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FIG. 6



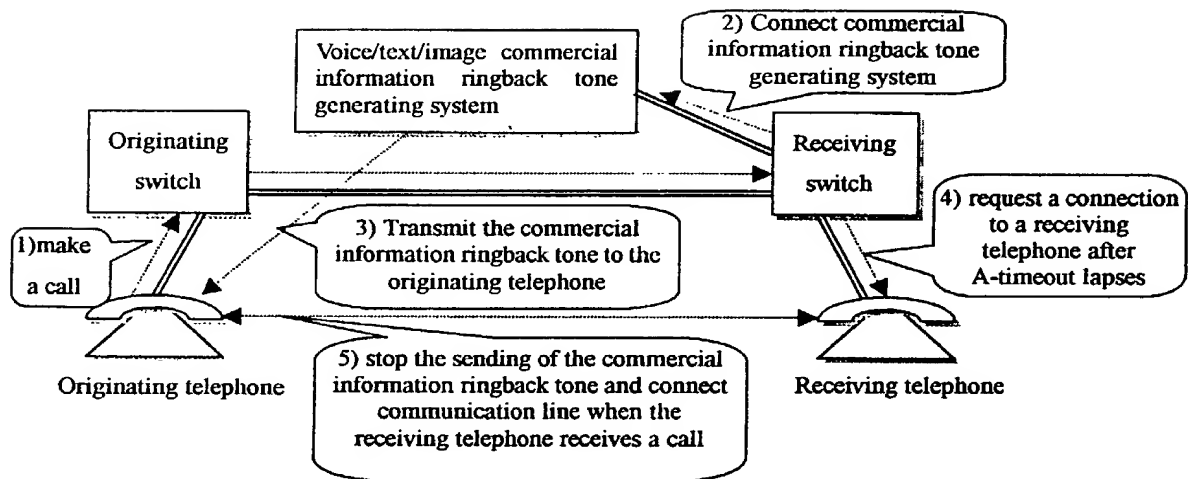
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FIG. 7



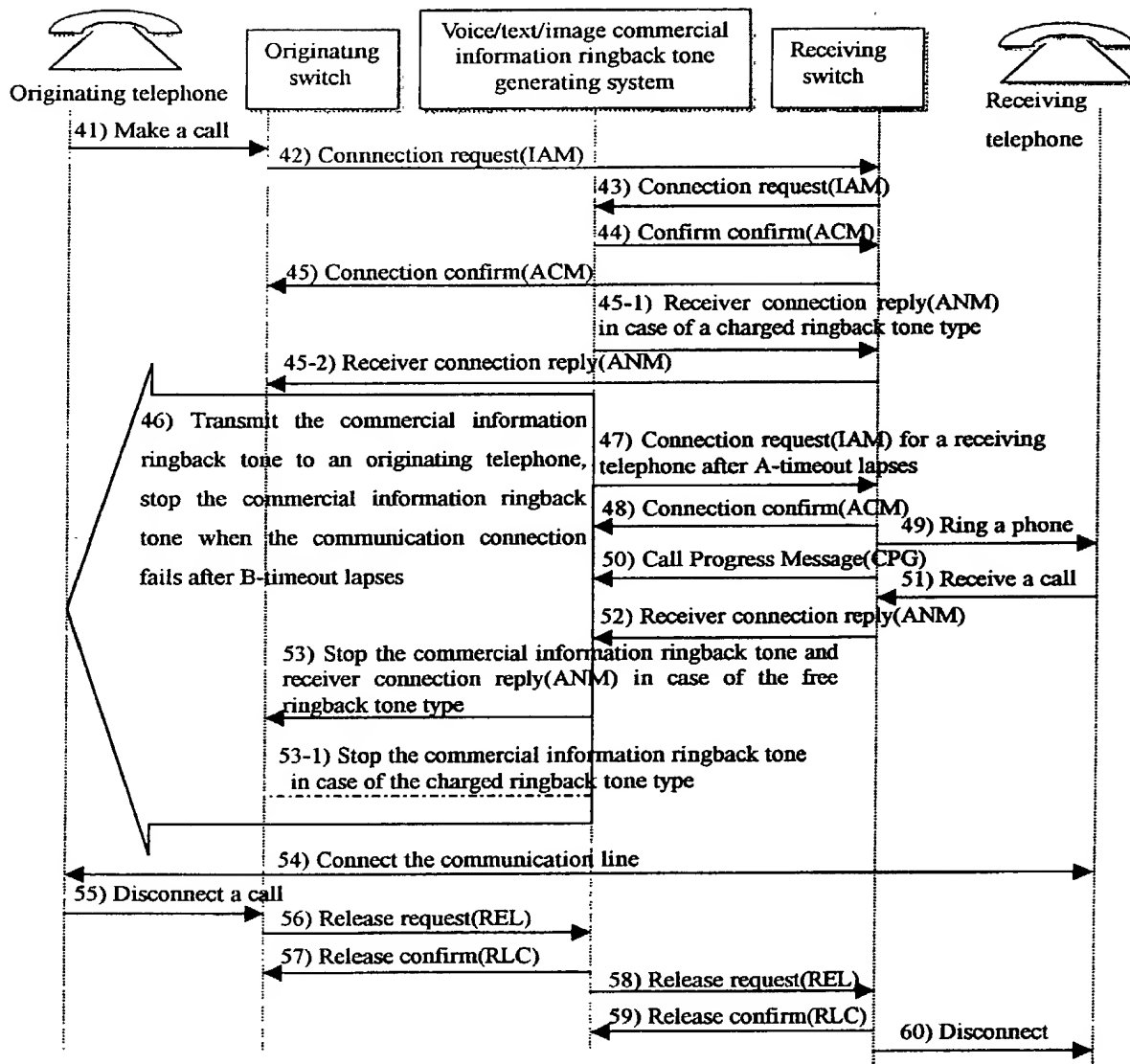
9/21

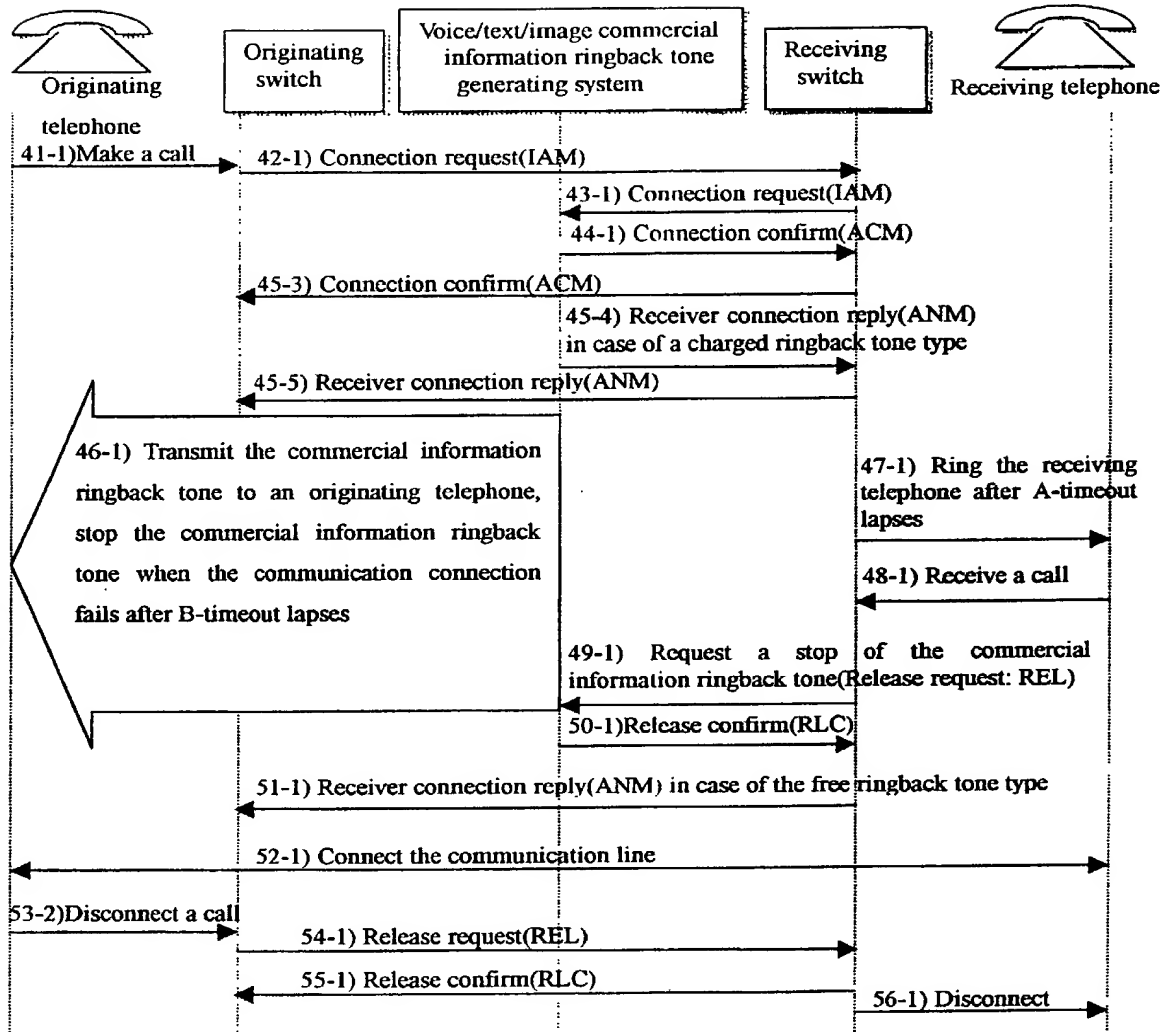
FIG. 8



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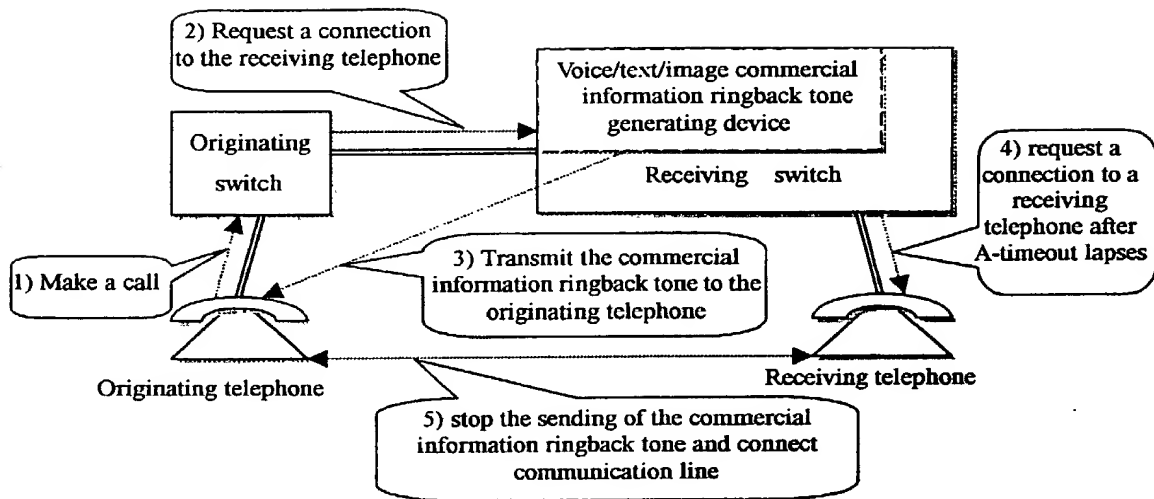
FIG. 9a



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FIG. 9b

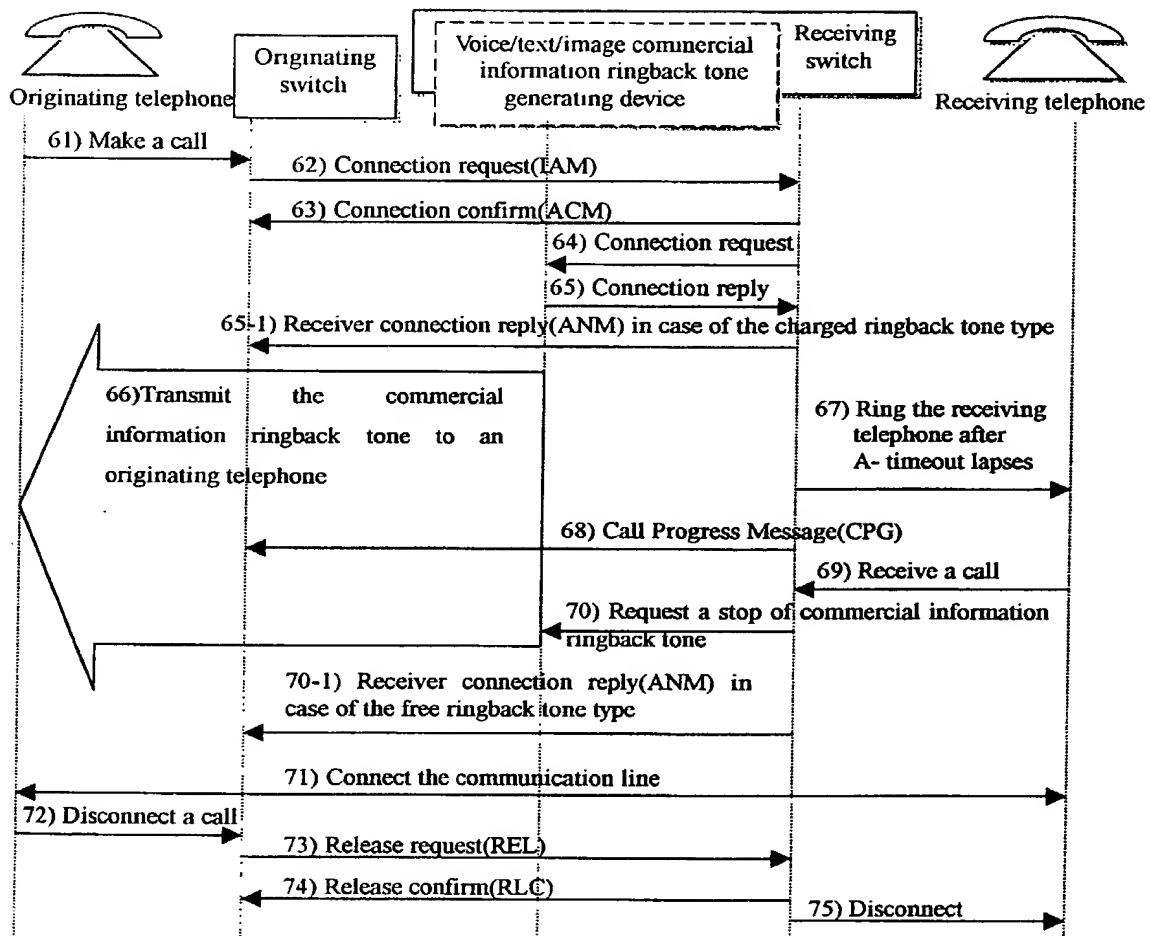
12/21

FIG. 10



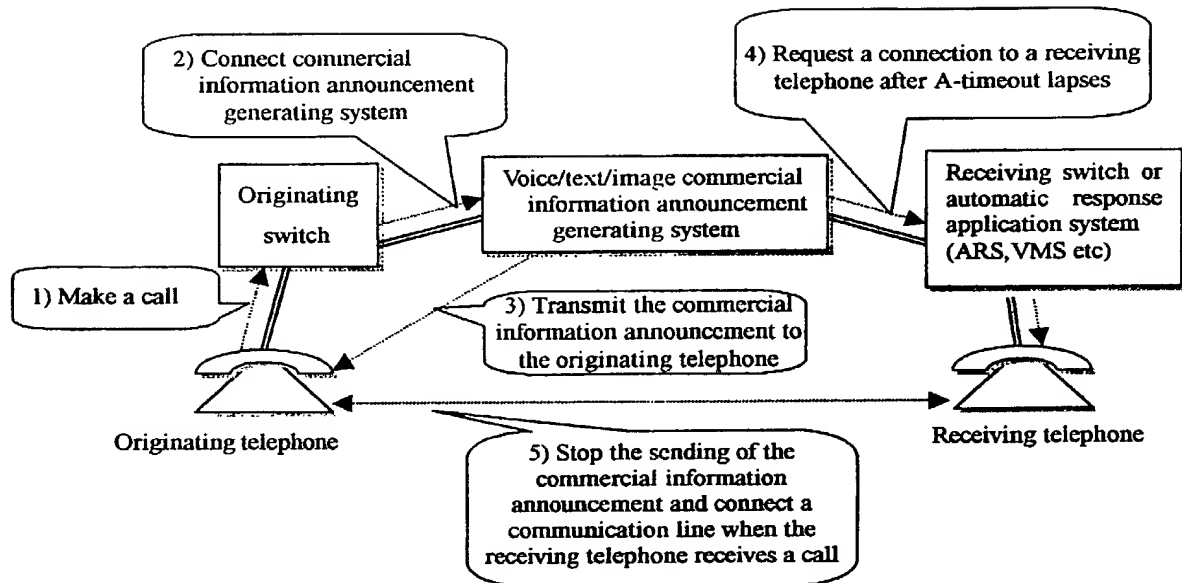
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FIG. 11



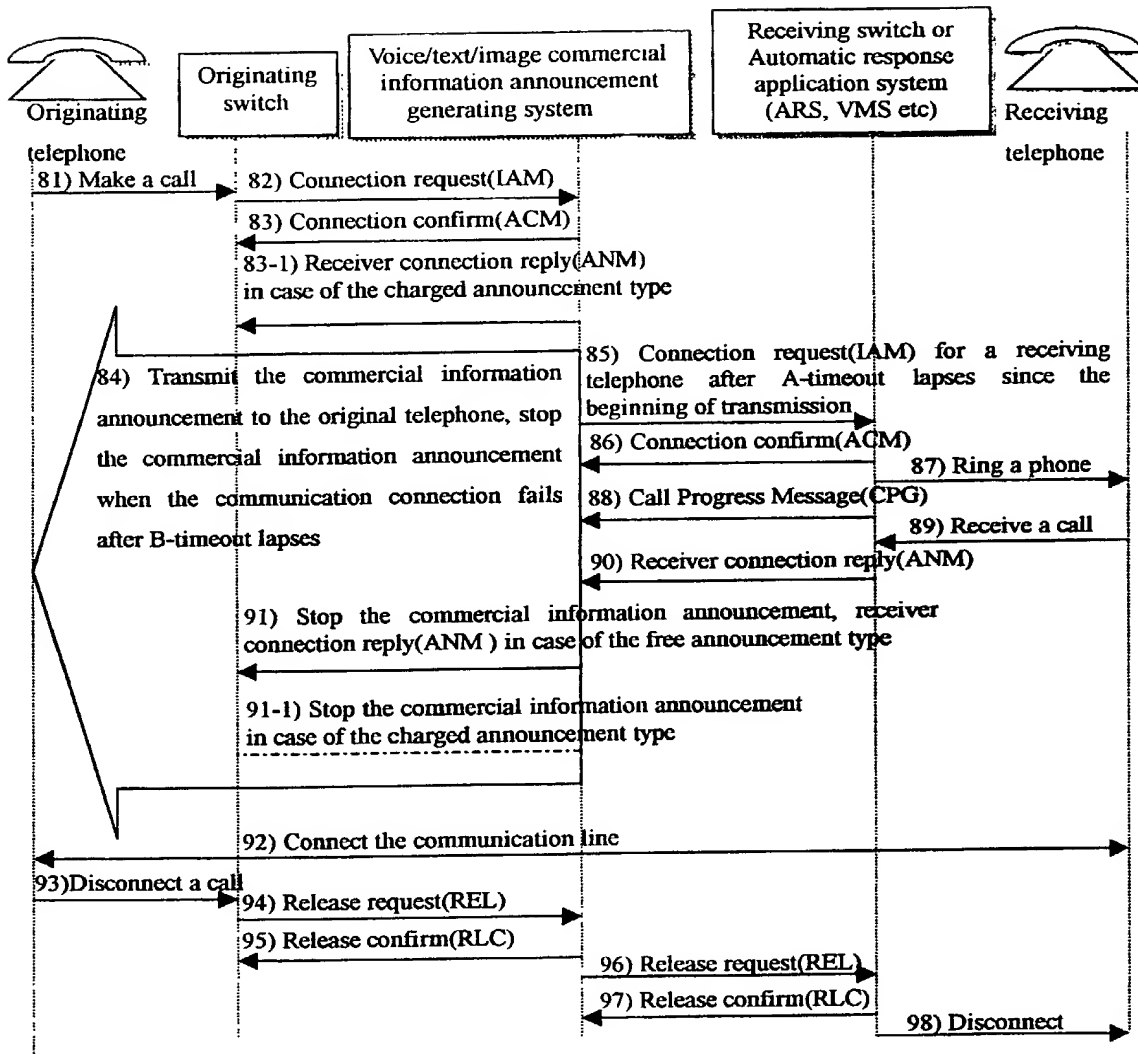
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FIG. 12



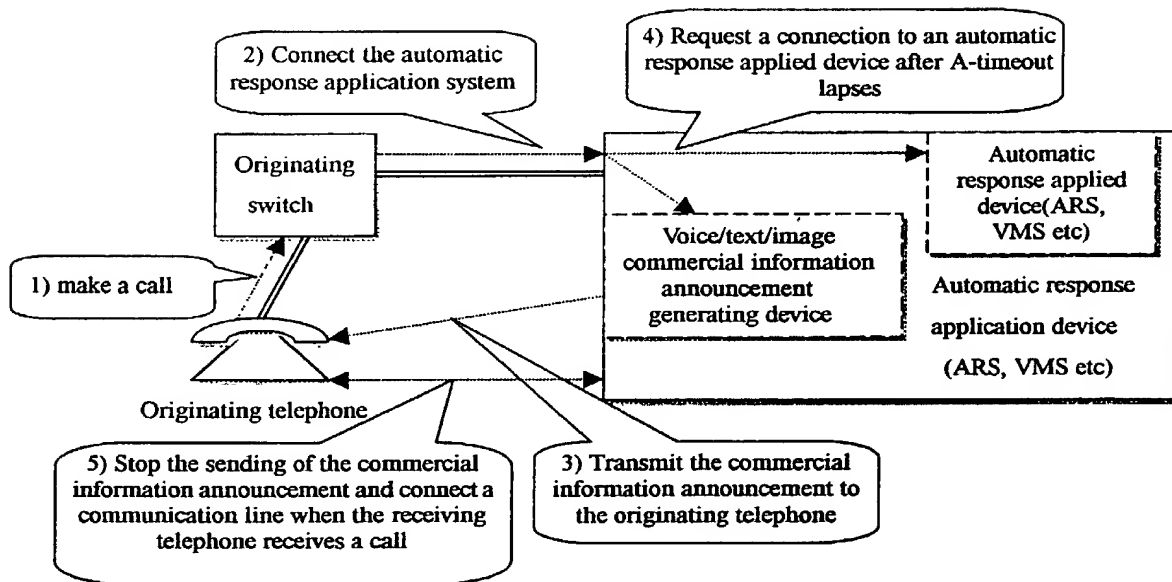
15/21

FIG. 13



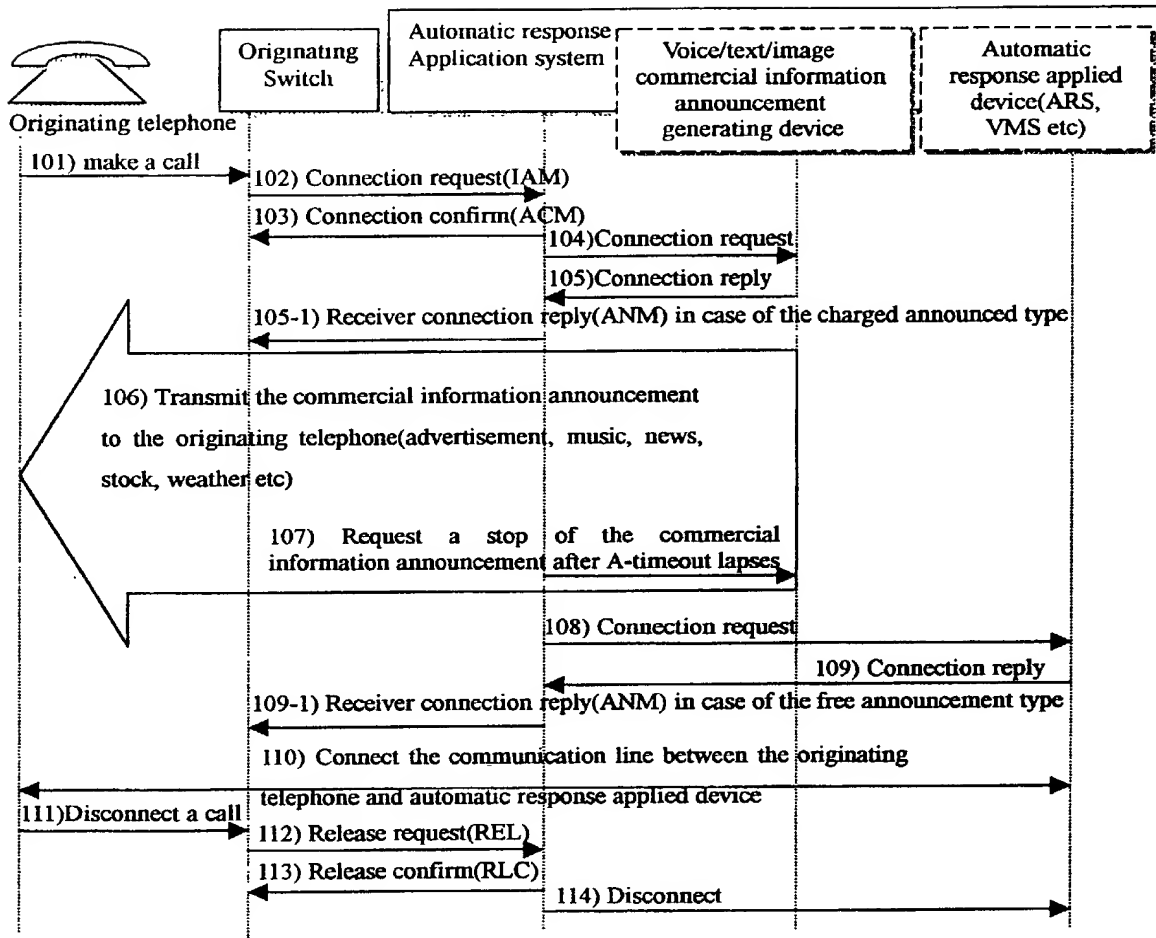
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FIG. 14



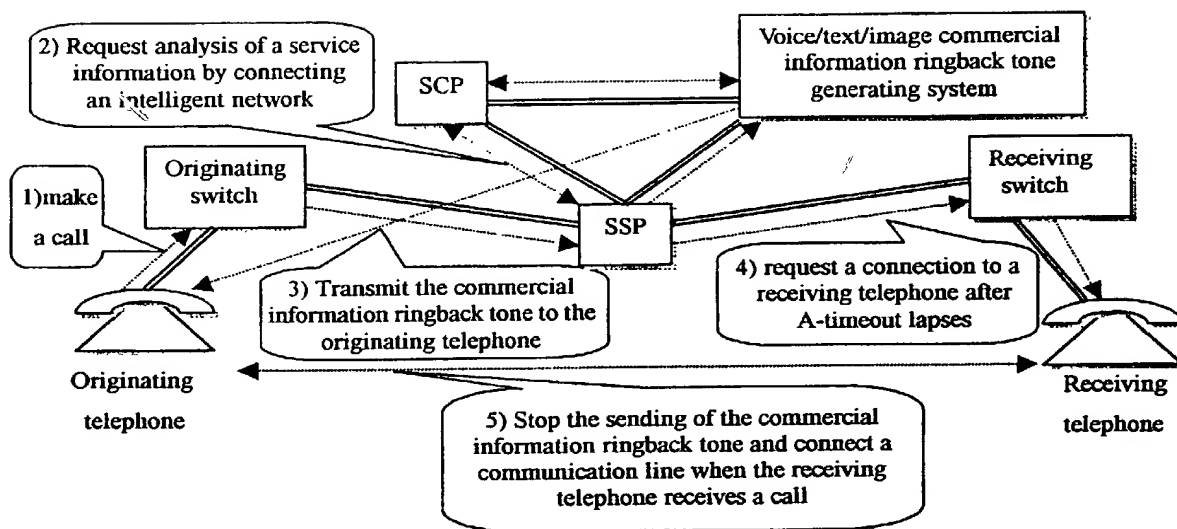
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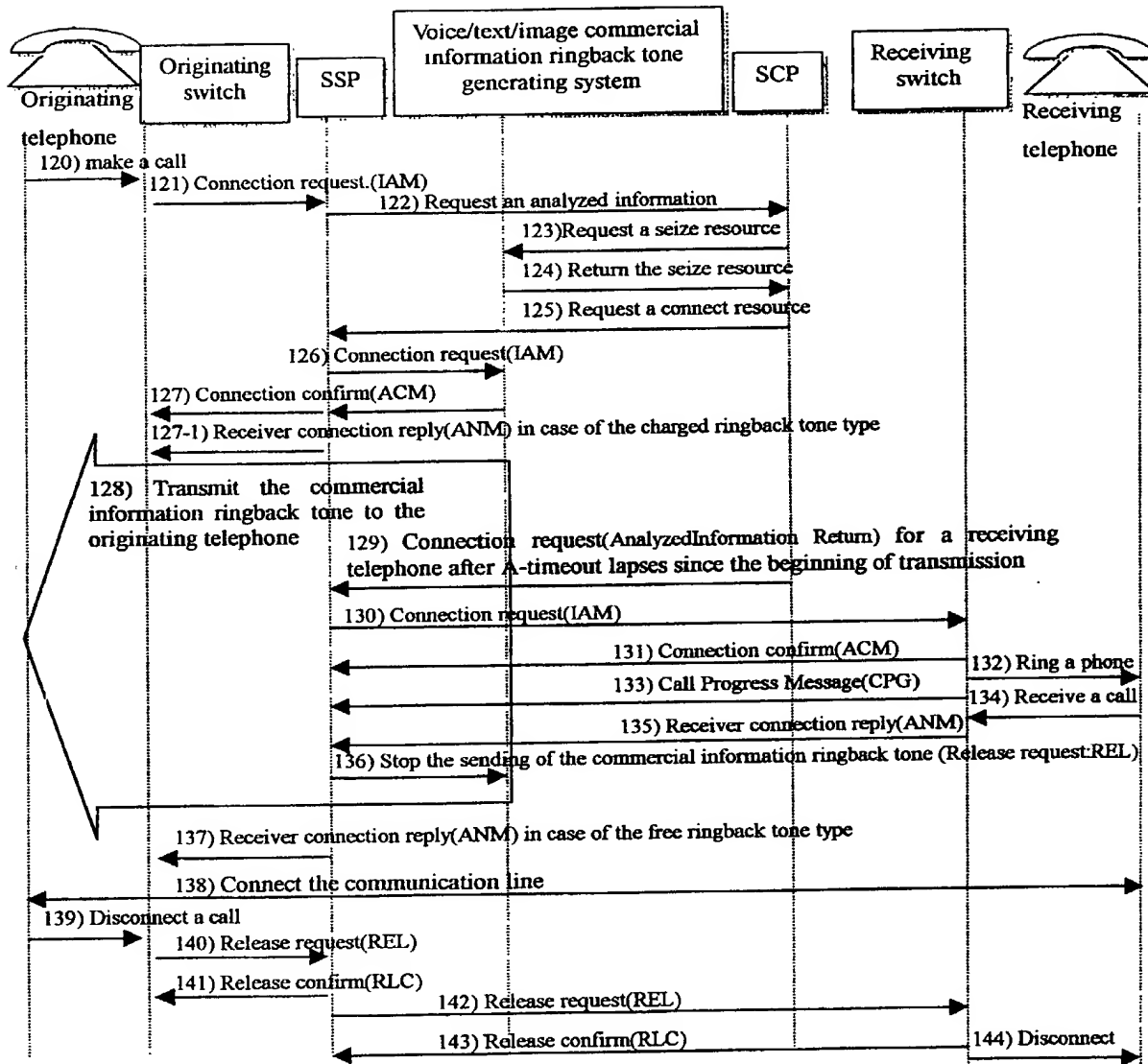
FIG. 15



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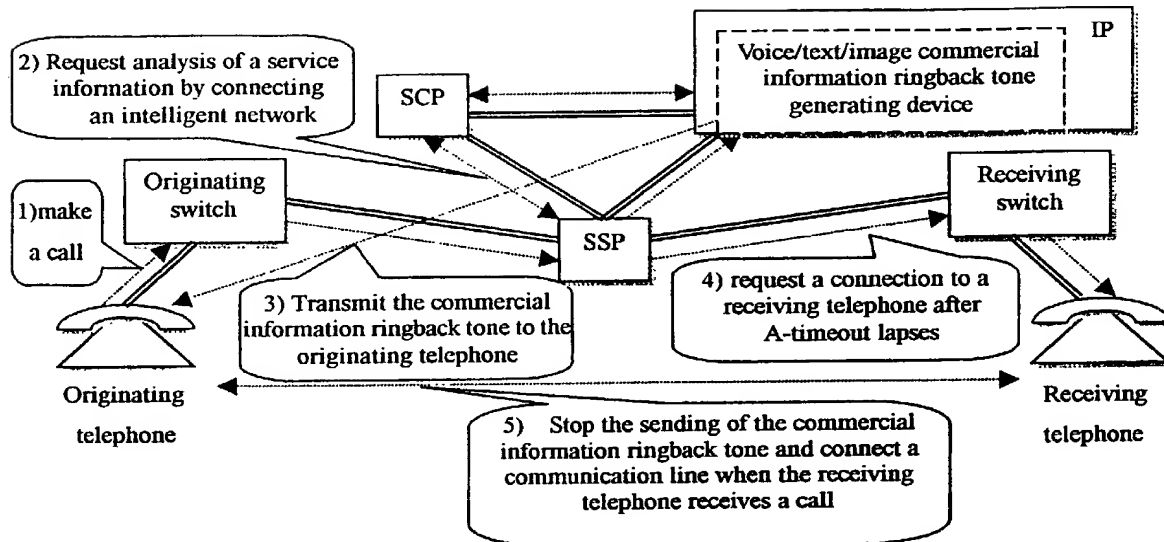
FIG. 16



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FIG. 17

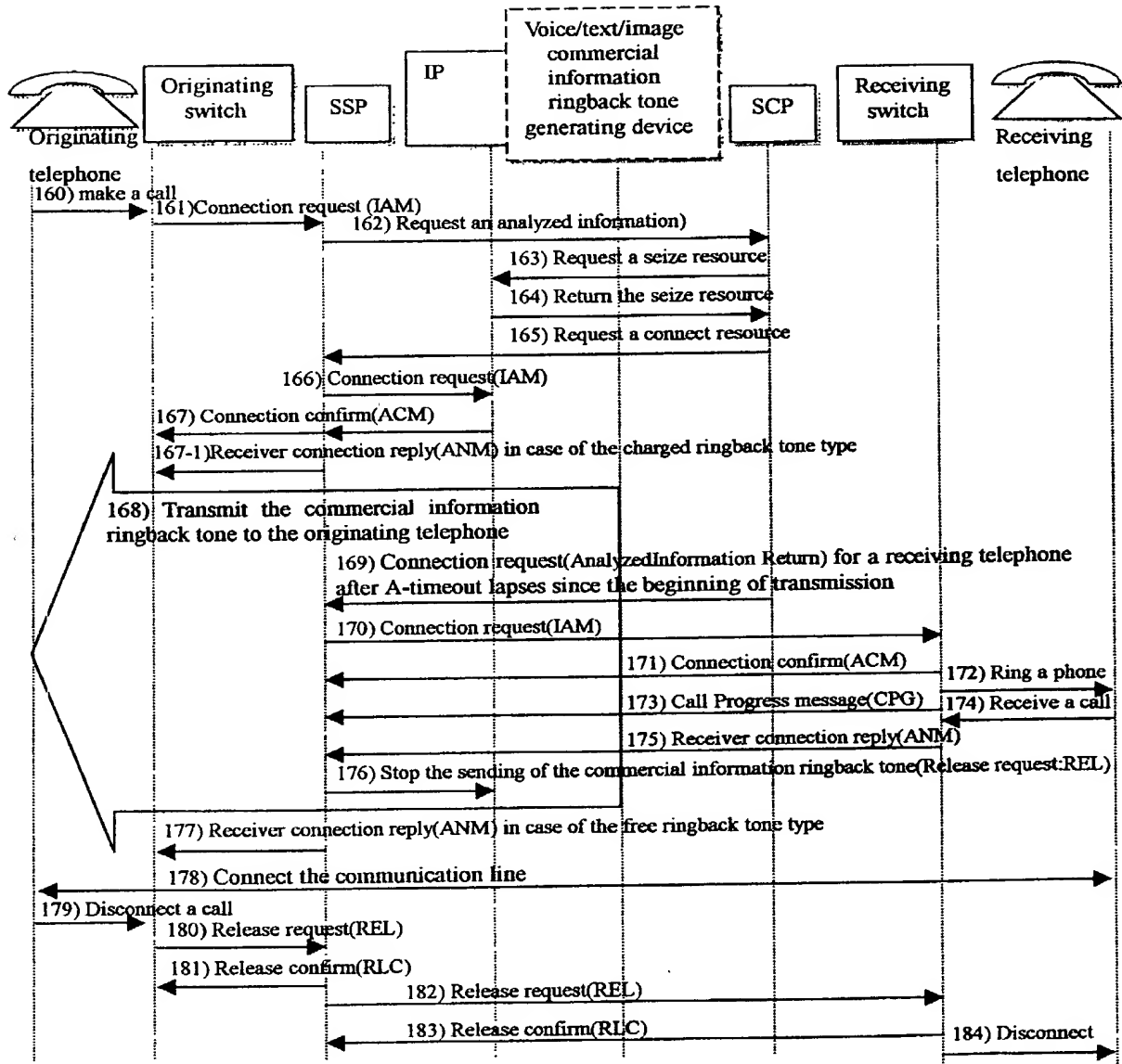
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FIG. 18



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FIG. 19



PATENT (U.S.A.)
ATTORNEY'S DOCKETING
2048-3-02DECLARATION
and POWER OF ATTORNEY☒ ORIGINAL
☐ CONTINUATION-IN-PART
☐ DIVISIONAL

As a below named inventor, I declare that the information given herein is true, that I believe that I am the original, first and sole inventor (if only one name is listed as 1 below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**METHOD AND DEVICE FOR GENERATING VOICE/TEXT/IMAGE COMMERCIAL INFORMATION
RINGBACK TONE DURING COMMUNICATION WAIT**

the specification of which is attached hereto unless the following box is checked:

☒ was filed on NOV. 17, 1999 as United States Application Number or PCT International Application Number PCT/KR99/00690
and was amended on _____

My residence, post office address and citizenship are as stated below next to my name.
I acknowledge my duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations § 1.56(a).
I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.
I hereby claim foreign priority benefits under Title 35, United States Code, § 119 OR 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate, or any PCT international application having a filing date before that of the application on which priority is claimed:

PRIOR FOREIGN APPLICATION(S)

COUNTRY	APPLICATION NUMBER	DATE OF FILING Month Day Year	PRIORITY CLAIMED UNDER 35 U.S.C. 119
KOREA	1999-29133	JULY 19, 1999	YES
KOREA	1999-33113	AUG. 12, 1999	YES
KOREA	1999-41268	SEP. 27, 1999	YES

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or United States application(s) if and insofar as the subject matter of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

(Application Serial No.)

(Filing Date)

(Serials)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or Agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

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3	Name of Inventor	Residence: CITY	STATE or COUNTRY
	Mailing Address		CITIZENSHIP
4	Name of Inventor	Residence: CITY	STATE or COUNTRY
	Mailing Address		CITIZENSHIP

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 1	SIGNATURE OF INVENTOR 2
DATE <u>2001 February 22</u>	DATE <u>2001 February 22</u>
SIGNATURE OF INVENTOR 3	SIGNATURE OF INVENTOR 4
DATE	DATE